

South Korea keeps a cool head in a crisis

David Swinbanks

The economic crisis that hit Korea at the end of last year has brought hard times for the nation's scientists, but despite cuts and the effect of the plummeting won, some researchers see hope for the future.

[TOKYO] The South Korean minister of science and technology, Sook-il Kwun Kwun, surprised Western scientists at a conference last November in Seoul by declaring confidently that South Korea intended to invest \$18 billion in a biotechnology initiative over a period of 14 years ending in 2007 (see *Nature* 390, 213, 1997).

But economic crisis overtook his prediction. Within a few weeks of this statement, the Korean economy plunged into turmoil, the local currency collapsed in value, and Korea will now be lucky if it can invest half this amount in the project in dollar terms.

Throughout the crisis, which has required a massive injection of \$57 billion emergency funding arranged by the International Monetary Fund (IMF), government science officials have remained optimistic.

Despite an IMF requirement that the government should trim 10 trillion won (\$6.45 billion) — or 10 per cent — from the government budget, officials have continued to maintain that the government's budget for research and development (R&D) would be exempt from such severe reductions because of its importance to the long-term strengthening of the economy. Indeed, in December, a government panel headed by the deputy prime minister announced an ambitious plan to increase the share of government expenditure allocated to R&D from 3.9 per cent to at least 5 per cent over a five-year period (see *Nature* 391, 111; 1998).

Short-term suffering

But it is now clear that science and technology will be adversely affected, at least in the short term. According to Kwun, the budget cuts expected to be finalized shortly by the National Assembly to meet the terms of the IMF-led rescue will include a 10.2 per cent cut in the 1998 budget of his ministry, the same as the rest of the government.

Kwun still believes, however, that the 5 per cent target for 2002 is "achievable", provided that future spending on R&D increases by at least 10 per cent a year and the percentage increase for the government as a whole is no more than half this value. But in the short run, he admits, "an adjustment period might be needed".

Government researchers are already feeling the pinch. At the Korea Institute of Sci-



Taking to the streets: protests followed news of cuts, but officials hope these will be short-term.

ence and Technology (KIST) in Seoul, South Korea's first major government research institute, cuts of up to 20 per cent are being sought in direct costs of intramural research. Furthermore, industry is said to be cutting back on research contracts for government institutes, such as KIST, and universities.

"I will not be able to hire new postdoctorates or graduate students because of the high budget cut and the absence of new research contracts," says Seo Young Jeong, principal research scientist of KIST's Biomedical Research Center.

As well facing cuts in government and industry funding, Korean science is already being devastated by the decline in value of the won. Most equipment and reagents, including laboratory animals, are imported from overseas — in particular the United States — and have to be paid for in US dollars, whose value has doubled against the won.

Sunyoung Kim of Seoul National University's Institute for Molecular Biology and Genetics, for example, ordered a \$68,000 cell sorter from the United States last September. It arrived two months later, and he received the bill as the currency crisis started. "When we made the payment two weeks later, we had to pay 70 to 80 per cent more than the original price in won," he says.

Every research group in Korea is now "very sensitive" about spending dollars, says Jeong. New KIST guidelines for overseas travel are "very restrictive", leading to cuts and cancellations of travel plans, and it has

also become "very tough" to invite foreign scientists to seminars or conferences.

One initiative expected to emerge comparatively unscathed from the cuts is the Creative Research Initiative grant programme, which substantially funds some of the country's leading scientists. The initiative was launched towards the end of last year with the award of 27 large grants to individuals heading small teams of researchers in universities and government research laboratories. The initiative's new money for 1998 has been cut by only 0.6 billion won — or 4 per cent — to 14.4 billion won. But current recipients have already seen the dollar value of their grants plummet since they were awarded.

Hope of recovery

Kwun estimates that one-fifth of the ministry of science and technology's R&D expenditure — about \$140 million — will be affected by the fall in the exchange rate. But he is also hopeful that, under the IMF programme, the won should recover to a rate of 1,100–1,300 won to the US dollar from its current rate of 1,550 won (compared with a rate one year ago of 770 won).

Indeed, some leaders in the scientific community see the current crisis as an opportunity. Wan Kyoo Cho, former minister of education who is an executive trustee of the International Vaccine Institute in Seoul and head of the Bioindustry Association of Korea, says Koreans are coming to understand that science and technology are "fundamental and essential" for economic restoration.

Kwan Rim, president of the advanced institute of technology of Samsung, the giant electronics conglomerate, says his institute sees a "combination of danger and opportunity" in the crisis. "The sense of danger should be used to unite the organization around the common objective of survival, and the sense of opportunity should be capitalized on to ensure the achievement of breakthroughs."

Despite plans to restructure Samsung this year because of the crisis, Rim says the company's R&D activity will be increased. The number of personnel will increase by 9 per cent to 22,000, and the R&D budget will increase by 15 per cent, to 2.5 trillion won.

Researchers at Samsung's biomedical research institute in Seoul are being squeezed by the crisis. But, like Rim, they are confident that ambitious plans to expand research facilities at the company's adjacent medical centre, in conjunction with the company's recent establishment of a medical faculty at a private university in the outskirts of Seoul, will go ahead as planned.

Kwun is also optimistic. He says that the new administration of President Kim Dae-jung, who takes power at the end of this month, plans to restructure the government, and that the ministry of science and technology is likely to be given "greater versatility and more power".

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