Korea begins funding projects to catch up with rest of world

Seoul. South Korea's Ministry of Science and Technology (MOST) last week announced the first projects in a $6-billion effort by South Korea to catch up with the technology of Japan and leading Western nations by the beginning of the next century.

The Highly Advanced National Project, more popularly called the G-7 project, is intended to bring South Korea's technology up to a level competitive with the G-7 nations (Japan, United States, Canada, France, Germany, Italy and the United Kingdom) by 2000 (see *Nature* **354**, 176; 1991). The Korean government intends to invest more than 2,400 billion won by 2001, matched by a similar contribution from industry.

Last week's announcement covered three of the 14 proposed research areas for the G-7 project: new pharmaceuticals and agrochemicals, new advanced materials and new functional biomaterials. These three topics come under the jurisdiction of MOST. Other G-7 projects, covering such areas as high-definition television, semiconductors, integrated services and data networks and computerized manufacturing systems, will be announced shortly by other ministries.

More than 20 government institutes, 50 universities and 60 private companies will participate in the projects announced last week. Leading them on the government side is the Korea Institute of Science and Technology (KIST) and the Korea Research Institute of Chemical Technology (KRICT). Major industrial participants include such conglomerates as Hyundai, Samsung and Daewoo and several pharmaceutical companies.

A total of 27 billion won (US$34 million) has been set aside by government and industry for the three research areas in 1992. Just over half of this budget was assigned last week (see table) with the rest to follow in a few months.

The lion's share of funding goes to development of new drugs and vaccines, in particular antibiotics. Dozens of pharmaceutical companies and several universities will participate in this effort, which is led by KIST (see sidebar) and KRICT. And two new nonprofit government–industry consortia — the New Medicine Development Consortium and the Genetic Engineering Research Consortium — have been established.

Companies such as Hyundai, Samsung and Daewoo are backing the projects to develop advanced materials, such as ceramics, for use in heavy industry, automobile manufacturing and the electronics industry. But so far there is no sign of participation by other nations, as Korean officials had hoped (see *Nature* **357**, 100; 1992).

David Swinbanks

Where the money goes

(in millions of won, 790 won = US$1)	Government	Industry
New pharmaceuticals and agrochemicals	7,300	2,812
Antibiotics		
Herbicides/insecticides		
Hepatitis drugs/vaccine		
Anti-cancer drugs		
Anti-viral drugs		
Hypertension drugs		
Benzenoid germicide		
Other drugs and vaccines		
Screening of drugs and agrochemicals		
Common basic technology & international cooperation		
New advanced materials	2,959	1,544
High-strength aluminium		
Ceramics/ceramic engine		
Polymers		
Composite materials		
Heat- and wear-resistant materials		
High-density magnetic materials		
New functional biomaterials	132	132
Biodegradable polymer		
TOTAL	10,392	4,489

G-7 is wake-up call for KIST

Seoul. Jung Uck Seo, the newly appointed president of the Korea Institute of Science and Technology (KIST), says that the G-7 project and others like it are intended to wake up his institute from the "dreamland of the 1970s" and bring his researchers closer to addressing the needs of society. KIST, based in Seoul, is one of South Korea's leading research institutes with more than 750 researchers, including those in affiliated institutes in Daeduck science city south of the capital.

The institute was established by the Ministry of Science and Technology in 1966 to bring together academic institutions and industry. But Seo and other government science policy-makers feel that some KIST researchers have lost touch with the needs of industry, and that G-7 will bring them back into line.

KIST was modelled on national research laboratories in the United States, and despite its location in overcrowded Seoul boasts a large campus. Seo says that KIST must now serve a future based on Korean culture; it was a "baby delivered without pain", he says, but after 25 years it has "reached adulthood".

As an example, he points to South Korea's development of digital switching systems for the telecommunications industry. "If we had not made the effort to develop those switches ourselves, our telecommunications networks would have been completely dominated by one US company", he says. "Instead, now we export our switches." **D.S.**

Defence scientist quits Indian post for US academic job

New Delhi & Washington. India's chief defence scientist for more than a decade, V. S. Arunachalam, has resigned in frustration over the lack of funding for major defence research and his government's continued reliance on foreign military technology. Arunachalam will be spending the next two years as a visiting professor at Carnegie Mellon University in Pittsburgh, Pennsylvania.

As head of the Defence Research Development Organization (DRDO), Arunachalam oversaw 35 defence laboratories with an annual budget of 11 billion rupees (US$300 million) and is credited with the country's rapid progress in defence research. But Arunachalam was criticized for his agency's failure to develop a main battle tank, a project begun in 1975, and a light combat aircraft, begun in the early 1980s. In response, Arunachalam blames the government for failing to provide sustained support.

He also blames the government for being in such a hurry that it would rather import defence technology than wait for the homegrown product. As a result, he says, the DRDO has been hurt by "a great deal of invisible foreign lobbying" from companies peddling their wares to India.

But Arunachalam says these internal battles are not the reason behind his resignation, saying instead that he has long wanted "a change of pace". At Carnegie Mellon, he will work on the mechanical properties of materials and on technology transfer. He intends to take a new position with the Indian government when his sabbatical ends.

K.S. Jayaraman & Traci Watson