Hungary Seeks Ways to Live Off Its Wits

The government is giving special priority to basic research in its economic planning, including the exploration of new techniques for turning scientific talent into hard currency

Budapest

HUNGARY has become the first Eastern European nation to introduce a program for awarding fundamental research grants on the basis of open competition among research groups. In doing so, it has diverged significantly from the pattern adopted from the Soviet Union in the late 1940s, under which funds for fundamental research have been awarded to institutions primarily according to centrally determined priorities.

The competitive awards system is a central component of a new Hungarian Research Foundation that has been set up to help shift the focus of government support for research back to basic science, whose share of the total research and development budget has dropped from 15 to 10% over the past decade. The creation of the foundation is part of an attempt to nurture the scientific abilities of a nation whose survival has long depended as much on its intellectual as its industrial skills.

The additional money being provided for basic research—4 billion forint ($900 million at the official exchange rate) over the 5 years from 1986 through 1990—is not large by international standards for a country of 10 million people. "But at least it is a beginning" says István Láng, general secretary of the Hungarian Academy of Sciences, which has been given the task of deciding how the money should be allocated.

This blend of Western and Soviet approaches for selecting research priorities is, like Hungary's broader economic initiatives, being closely watched by other Eastern European nations, particularly the Soviet Union itself. They are looking for possible guidance on how the entrepreneurial approach apparently required to integrate scientific knowledge into a high-technology economy can be successfully developed within a socialist system.

For the first two decades after World War II, Hungarian science was organized on the Soviet model. This meant academy-run research institutes operating largely independent of both the teaching activities of universities and the technological needs of the economy. Since the economic reforms introduced in 1968, in which market forces were allowed to become a major influence on all levels of social life, these institutes—as well as university-based research groups—have been encouraged to actively pursue direct outlets for their scientific and technological skills, for example by acting as consultants to industrial enterprises.

Now there is a widespread feeling in Hungary that the pendulum has swung too far, and that the emphasis on technical problem-solving has jeopardized any long-term strategic approach to the needs of the economy. "In the past few years, basic research in Hungary has started to disappear because everyone was running after contracts from industry, which wanted short-term results," says Tibor Vámos, former director (and now governing board chairman) of the academy's Institute for Computer and Automation Research.

Hungary is exceptional in the Eastern bloc in encouraging its scientists to travel and work abroad.

This decline has coincided with a period in which Hungary's science policy leaders have been watching a renewed emphasis in the West on the economic potential of basic science. As a result, they have grown aware of both emerging opportunities for exploiting the particular skills of Hungary's scientific community—for example in mathematics or molecular biology—and the danger that lack of funds and equipment could result in even these areas falling behind at an international level.

Such arguments have been used by Lennart Pál, former general secretary of the Academy of Sciences and now the secretary responsible for science and culture of the Central Committee of the Hungarian Communist Party, to persuade the government to create a national fund for basic research as part of its 5-year plan for 1986–1990.

"We are in a period that requires radical structural change in our economy, which means an acceleration of technological development and the modernization of our technology," said Pál in a recent interview. "Such a program can only be implemented if there is also a highly developed scientific infrastructure, and it is in this context that we are placing a special emphasis on basic research."

About half the new money allocated by the government will be used to strengthen the scientific infrastructure of the country. Indeed, the importance being attached to the fund is reflected in the fact that the government has promised to make available 20 to 25% of the total in hard (convertible) currency to buy scientific apparatus and journals from abroad. That is a considerably higher proportion than it is awarding to other sectors of the hard-pressed economy.

Eleven equipment centers will be set up: six in Budapest, each devoted to a particular scientific discipline, and five in different regions. In addition, money is being made available for the purchase of 300 personal computers for installation in research laboratories and libraries.

The other half of the money has been allocated directly to research groups on the basis of an open competition organized at the beginning of last year. More than 1900 applications were received, and 40% were granted (although the total value of the grants was only 25% of the value of the requests).

The new system did not meet with immediate widespread approval in the scientific community. "Many research workers were initially against it, and wrote to us saying so," says academy general secretary Láng.

Others argue that the new procedures have not gone far enough in bypassing the traditional networks of personal contacts through which research grants have frequently been distributed in the past. "There are still a lot of cases in which your position determines how much support you receive, and this is likely to go on for some time; you cannot avoid it," says one research scientist.

The general opinion in the scientific community seems to be favorable, however. "Scientists would like to keep the foundation in the future, even if they have some criticism of the way in which applications were evaluated," says Láng. "The next step for us is therefore to prepare ways of evaluating projects, and of using these evaluations for the future allocation of grants."

Changing the basis on which research funds are allocated is not the only area in

which evolution is taking place in Hungarian science. Equal attention is being paid to new ways of encouraging links between Hungarian science and the global marketplace in high-technology products.

Hungarian science already depends heavily, perhaps more than that in any other socialist country, on close relations with scientists in the West. Over the past 20 years, for example, the government has actively encouraged its scientists to travel abroad, particularly when this enables them to work with research equipment and computer facilities that they would not otherwise have access to. The government also encourages joint research projects between Hungarian-based and Western scientific groups.

"Hungary is exceptional in the Eastern bloc; even in the universities there are many possibilities for travel and cooperation," says biochemist Andor Udvardy. "The situation has improved significantly over the past decade. In the 1970s, it could take 6 months to get permission to go abroad; today it's possible to get such permission in less than a week." Thanks to this openness, 584 scientists visited the United States in 1984, some on government-sponsored exchanges but the majority on privately arranged visits that often include part-time teaching positions in U.S. universities.

One reason for this relatively liberal attitude is that it helps relieve hard-currency pressures. For example, many scientists in Hungary rely on foreign research partners to order laboratory chemicals and other equipment for them—a move that can also be far quicker than ordering the equipment domestically. Another is that the government hopes Hungarian scientists will feel less tempted to become permanent emigrés if they can take up research posts abroad at the same time as retaining responsibilities with their home institution, or if they can accept foreign research contracts from which they generate some personal income.

"It is one of the only ways that we have to keep bright people at home," says Lajos Alföldi, director of the Szeged Biological Research Center of the Academy of Sciences. "Otherwise this brainpower would be drained from the country."

These international links have an additional value: the possibility of carrying out research in Hungary under contract to foreign companies. Such arrangements could provide a way of exploiting Hungary's intellectual skills and gaining venture capital and marketing expertise—two components needed for commercial success of high-technology fields that the country now lacks.

In the field of computer science, research institutes such as the Institute for Computer Science have already carried out considerable work on a contract basis for Western companies, while software companies such as Comporgan provide teams of computer scientists as consultants to a range of Western enterprises.

Similarly in biotechnology, a small company known as Biotechnica has recently been established by the Szeged Center and charged with establishing links with Western firms in a way that will make it easier for research carried out in Hungary to find direct outputs in Western markets.

A new applied research center is being built in Szeged to carry out contract research separately from the Biological Center itself, but it will use their research scientists. The creation of such new types of organizations is strongly supported by Pál Tétényi, chairman of the National Committee for Technological Development. "Up to now, direct contracts have been the main channel of communication between universities and industry, but we have to start looking for new methods, especially in those areas—such as biotechnology—where we are trying to develop new technologies based on scientific discoveries."

Close attention is being paid to creating the conditions under which foreign capital will be prepared to invest in Hungarian scientific skills. This includes safeguards against transferring technology to other countries, in particular the Soviet Union.

For foreign companies, the attractions of hiring Hungarian brainpower is that it can be considerably cheaper than that available in the West. Low salaries for scientists are a source of continual complaint in Hungary itself; a university professor, for example, receives about $300 a month, about the same as a bus driver in Budapest.

Not everyone is pleased with the implication that Hungary is offering its brainpower for sale relatively cheaply in the international marketplace, rather than finding ways in which it can be more directly applied to building up the country's own technological resources. "It is a pity that it has to be done this way," says one theoretical chemist at the University of Budapest.

Others argue, however, that a nation that has always found itself at the meeting point between powerful political or religious blocs may have little choice if it wishes to survive with its national identity intact. "We have had more than 1000 years in which we have had to live on our wits, starting from the period in which we were originally caught between the Byzantine and the Western church," says Vámos. "Look at the number of nations that have disappeared over this period, while Hungary has managed to survive." ■ **DAVID DICKSON**

AIDS Panel Gets Reagan's Approval

A White House spokesman announced last week that President Ronald Reagan has approved the establishment of an advisory panel on AIDS. It will not be the powerful coordinating council that some scientific groups and members of Congress have advocated, however.

"It would be wrong if anyone thought this body was going to coordinate national AIDS policy," says Gary Bauer, assistant to the President for domestic policy. Instead, the group will be composed of "seven to ten distinguished Americans" and will act as a "sounding board" for the President, advising him about many aspects of the AIDS crisis, Bauer indicates.

Last fall, in its report "Confronting AIDS," the Institute of Medicine recommended that a "national commission on AIDS be created as a presidential or joint presidential-congressional commission." The Institute proposed that the commission monitor all research, health care, public health, legal, and ethical aspects of the AIDS epidemic; advise Congress and the President about these issues; and report to the public. Several members of Congress drafted bills that would establish a national AIDS commission or panel along these lines.

"We are looking for something that will be helpful to the President, rather than responding to congressional pressure," Bauer says. "We are not interested in a policy-making group at this point. We already have a policy board. Health and Human Services Secretary [Otis] Bowen, Education Secretary [William] Bennett, and all the other department secretaries sit on it. When there is an issue, they air that issue, and these concerns are taken to the President. We think the system is working just fine." Bauer's reference is to the Domestic Policy Council, which is headed by Attorney General Edwin Meese.

One of the issues the new panel is likely to address concerns screening people for antibodies to the AIDS virus. About 2 million persons in the United States today probably carry the virus; about 35,000 have developed full AIDS and more than 20,000 have died from it. "I think it's outrageous that public policy-makers are trying to devise policy without knowing how many people are infected with the AIDS virus," Bauer says. He indicates that his views are similar to those of Education Secretary Bennett in that both advocate wider testing for infection by the AIDS virus among prisoners, marriage license applicants, and immigrants,