

The young and the restless

Madrid. Hundreds of Spanish postdoctoral fellows, sent abroad for scientific training as Spain's economy took off in the 1980s, now find themselves stranded as the country's finances have faltered and the jobs to which they were expecting to return have failed to materialize. A new initiative by the cash-strapped government to provide short-term contracts for returning researchers has been decried as too little, too late, especially as the number of permanent positions is shrinking.

In 1984, post-Franco Spain began a concerted attempt to raise the low level of its research base, leading to the formulation in 1986 of the national research and development plan, which laid out a framework for research and development along European lines. As part of the plan, young scientists were sent abroad for pre- and postdoctoral training with an expectation of secure employment on their return to Spain. But the high hopes crashed along with the economy, and most of the new-minted researchers found themselves with little hope of a permanent job. Some short-term contracts, with poor employment conditions, were available, but from 1985 only 200 such contracts a year were offered — not enough to go round.

Moreover, Spain started and is continuing a campaign to train more PhDs at home: in 1991, more than 10,000 graduate fellowships were provided. According to José Mato, president of Spain's Council for Scientific Research (CSIC), the idea was to secure Spain's future by substantially increasing the research population. "Although it sounds obvious", he says, "to develop science in Spain, firstly we had to have scientists, and secondly we had to create for them places to work."

The second part of the plan has not been as successful as the first. Angel Pestaña, a molecular biologist at the CSIC Institute of Biomedical Research in Madrid, says that after a brief rise in the number of permanent positions for young scientific investigators in the early 1980s, the ratio of short-term to permanent contracts for young scientists has risen dramatically. The ratio in 1991 was about 4:1, but in Pestaña's discipline it is now about 10:1.

Roberto Fernandez de Caleyá, director general of the Ministry of Education and Science, says that the government pays travel expenses for the Spanish researchers to come home, but cannot afford to give them permanent jobs. He estimates that about two-thirds find temporary employment in research institutes and universities, but exact statistics are hard to come by because the government does not keep track of where the returning researchers end up.

Young scientists who have gone abroad are at a disadvantage because they must

compete for jobs from a distance and against an increasing number of homegrown researchers. Permanent university jobs are advertised only in a closed circulation university magazine. Many returning scientists therefore take up, as an interim measure, special contracts which originally covered wages only and gave none of the usual employment rights, such as pension benefit or social security. Researchers on these contracts work on established projects and have no chance to develop their own research interests.

In response to the general dissatisfaction with this system, the government has established this year a new system of three-year contracts with full employment benefits. And there are more of them — 300 for 1992 and the same for next year. Most researchers, however, find this an insufficient improvement, particularly because it does not address the more basic problem of a shrinking availability of permanent research jobs in both the universities and industry.

Running out of steam ...

Munich. Since the restoration of democracy in the late 1970s, Spanish research has grown much faster than in other Western economies. In the past ten years, Spain has more than doubled the percentage of gross national product (GNP) it allocates to research. But now the government says that the rate of growth cannot be sustained, and science is likely to stagnate at a level that remains one of the lowest in Europe.

In 1983, Spain put only 0.48 per cent of GNP into research, much less than the 2 per cent average among Europe's richer nations. Since then, the government has raised research budgets generously — an average annual increase of more than 15 per cent — and by last year research spending was up to 0.9 per cent of GNP. But economic collapse

The government is sensitive to the problem, but with its restricted budget it has no easy solution. In addition to tinkering with its short-term contract options, it is now looking to outside sources to help it out. Scientists are being encouraged to apply for funding from the European Community, and Spanish industry is being encouraged to share the burden (see below).

Not everyone is sympathetic to the plight of researchers. Iñigo Aguirre de Cárcer, subdirector at the Ministry of Education and Science, says that researchers make life harder for themselves because they are generally unwilling to consider positions outside the main centres in Madrid and Barcelona. Spain has a policy of devolving research and some openings are appearing in the provinces. But the virtual absence of scientific support in the provinces, compared to Madrid, which hosts at least half of all Spain's scientific activity, is unattractive for the ambitious.

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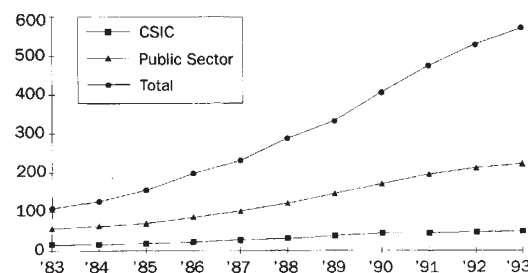
has forced the government to think again about the speed of modernization. In 1992 the science budget grew at a rate barely above inflation, and something similar is expected for 1993.

The poor economy has necessitated hard thinking about spending priorities, but has Spain also lost the political will to bring its research base into line with the European Communities (EC)? 'Not so', says Elias Fereres, secretary of state for universities and research. Some decisions demonstrate the government's continuing commitment to research, he says; for example, education and science will be the only ministry exempt from the freeze on civil service appointments announced for 1993.

Fereres also stresses the positive achievements of Spanish research before the brakes were put on growth. Scientific productivity, as measured by the US Institute for Scientific Information, has doubled along with investment. Spain contributed 1.7 per cent of the world's scientific output in 1991, compared with 0.8 per cent in 1984. The quality of papers has also increased, as judged by the usual parameters of impact factors and publication in English-language, refereed journals. Measured per researcher, Spanish output is on a par with the richest countries. And the introduction of the national plan in 1986, which for the first time forced a logical

Research and development outlays in Spain

Figures in thousand millions*



* 1991-1993 figures estimated

Source: 1983-90: OECD, INE. 1991-93: Nat. Plan, SDIC