

# Science in Portugal joins the mainstream

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**The purposeful use of funds from the European Union has provided a much-needed fillip to the research enterprise in Portugal. But with progress comes a range of problems familiar elsewhere in Europe.**

[LISBON, PORTUGAL] Over the next few weeks, the Portuguese government will put the finishing touches to a series of reforms designed to help equip the country with the science infrastructure needed to help its economy catch up with those of its European partners.

In financial terms, Portugal has a long way to go. Its total spending on research and development, standing in 1992 at 0.63 per cent of the gross domestic product, is less than that of any other member of the European Union. For example, its nearest neighbour, Spain, spent 0.91 per cent.

But the socialist government that came to power in December 1995 is determined to change this situation. The latest reforms — including the creation of a new national foundation to fund basic research — are intended to streamline science in the universities and research institutions.

In financial terms, research, together with education, is already a priority; in an otherwise austere budget, funding for research, which was kept constant in the early 1990s, has been increased by 16 per cent this year.

## European dimension

Central to the reforms has been Portugal's integration into the rest of Europe, a process that started with the 'revolution' of 1974, which freed the country from the dictatorship of Antonio de Oliveira Salazar, and which has accelerated dramatically since Portugal became a full member of the European Union in 1989.

It is therefore appropriate that the reforms are being led by José Mariano Gago, the minister for science and technology. Before becoming chairman of Portugal's national research funding committee in 1986, he was a research physicist at the European Laboratory for Particle Physics (CERN) in Geneva.

Part of the Europeanization of Portuguese science is clearly visible in the substantial use the country has made of so-called 'structural funds' — provided by Brussels to boost the economic development of the poorer parts of the community — to build a range of large, modern research facilities. Access to these funds was one of the concessions obtained by Portugal in joining the European Union in exchange for opening up its economy. While some countries have used them for more tra-

ditional projects, such as building roads and hospitals, Portugal, which had hardly any domestic science-based industry, has used them to boost its scientific potential.

A second element in this Europeanization process is Gago's determination to ensure a high representation of foreign scientists on 20 evaluation panels. These have been set up to assess the performance and plans of more than 300 publicly funded research units based in the country's universities and other institutions.

The results of the evaluation, which were sent out to institutions last month, are being used by the government as the basis of future support (15 of the 300, for example, have already been told their funding will end).

Gago says that the participation of scientists from other European countries has been central to Portugal's success in focusing funds on productive laboratories. "It was essential to have the involvement of foreigners in the evaluation panels," he says. "This practice should be built into European science policy and into bilateral agreements."

This process of rationalization and selectivity has been reflected in changes in other research organizations. Perhaps the most prominent is the Gulbenkian Institute of Science, founded on the legacy of the legendary oil entrepreneur Calouste Gulbenkian, whose research laboratories at Oeiras outside Lisbon have long been one of the country's few centres of international scientific excellence.

The foundation has recently introduced sweeping changes, in preparation for the arrival of its new director, António Coutinho, currently at the Institut Pasteur in Paris. The changes have not been without their critics, particularly workers nearing the end of their research careers who are being asked to make way for younger researchers.

But Horácio Menano, the foundation's director, argues that change is essential if the institute is to maintain scientific vitality. Furthermore, the new plans envisage the institute

becoming considerably more international in its activities, offering a temporary location for scientists around the world.

The broader changes in Portuguese science have not been without criticism, even from those who support their direction. Some, for example, claim that the research institution evaluations could have been applied even more rigorously, while the quality of the review process was itself mixed. Others have difficulty with the way in which structural funds from Brussels have been used to create many independent research entities — often set up to avoid the bureaucratic complexities of channelling funds through more conventional bodies.

Even those who have benefited from such funds claim they now face major difficulties because, while the money received can cover construction and equipment costs, there is no additional funding for operating costs; this must come from the national government. "At least when you have built a road, you can then charge tolls on it," says Antonio Xavier, director of the Institute of Technology for Chemistry and Biology, which was built near the Gulbenkian Foundation.

## Climate of change

Despite such difficulties, combined support from Lisbon and Brussels has, since the early 1990s, created a research-friendly environment in Portugal that is already beginning to bear fruit. This is reflected in the growing number of Portuguese scientists (such as Xavier) who have returned from abroad to senior posts.

"The whole climate for science in Portugal has changed for the better," says Alexandre Quintilhas, who returned from 20 years at the Lawrence Berkeley Laboratory in California to head the Institute for Molecular and Cell Biology, also built with structural funds at the University of Porto in northern Portugal.

According to Quintilhas, the main problem facing Portuguese science — apart from inadequate funding from the domestic budget — is that of providing adequate career opportunities for postgraduate students.

Gago says that training and employment of postdocs is "one of our top priorities now". One scheme launched recently by the government will pay on average half the salary of a PhD employed in industry for the first three years.

Many postdocs continue to face uncertain futures, particularly given the lack of new openings in universities. Gago says that, at present, the creation of new institutes means the country has no problem finding work for its PhDs, although he admits that "the number of people in non-permanent jobs after their PhDs is increasing".

Overall, however, Gago is optimistic about the future. "Science in Portugal is becoming much more normal in international terms," he says. □



Gago: optimistic about the future.