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A call to those who care about Europe's science

Better collaboration is a laudable goal, but that alone will not be enough to fix the damage caused by Europe's falling investment, says Amaya Moro-Martin.

When the European Parliament asked its proposed new commissioner for research what the continent should do about the state of its science, Carlos Moedas pledged greater cooperation between member states. Moedas might not have noticed, but we are already uniting: to protest against vicious budget cuts that are wrecking our scientific base and threatening our economic future.

These protests will reach a symbolic climax next week, with events planned in several European capitals, including the arrival in Paris of cycling French scientists involved in the *Sciences en Marche* campaign.

To mark this week of action and to highlight the need for a rethink on cuts, I and colleagues from across Europe have drafted an open letter to national governments and the European Parliament and Commission.

We encourage *Nature's* readers, as scientists and citizens who care about the future of research in Europe, to sign it here: openletter.euroscience.org.

The problems are many but can be summarized simply. The policy-makers and leaders of an increasing number of nations have completely lost touch with the reality of research.

They are ignoring how a strong research sector can contribute to the economy, something that is particularly crucial in the countries hit hardest by the economic crisis. Instead, they are imposing drastic budget cuts that are making these countries even more vulnerable. And all under the complacent gaze of European institutions.

There are too many examples to list, but here are some of the most prominent: since 2009, Italy has seen recruitment of scientists fall by 90% and the amount spent on basic research drop to nothing.

In Spain, the amount of money spent on civilian research and development has dropped by 40%, and fewer than 10% of researchers who retire are being replaced. Since 2011, the budget of Greek research centres and universities has halved, with a freeze on hiring. Already reeling from budget cuts of 50% for universities and research centres, Portugal may now have to close half of its research units because of a flawed evaluation process supported by the European Science Foundation.

French researchers are alarmed by the 20–25% decline in the number of scientific and academic positions and by the less than 10% success rate of the increasingly more prevalent grant-based funding. Even Germany is fostering fixed-term contracts through its science-employment act, making the future uncertain even for very experienced researchers.

Most of these measures are in the name of austerity. Europe's vain hope is that the private sector will step up to provide the spending increases required to reach the Lisbon Treaty's goal of 3% of gross domestic product. But this ignores the fact that private backing tends to be spurred by public investment: more than half of the United States' economic growth has come

from innovation that has roots in federally-funded research.

The drastic budget and hiring cuts, the latter recommended by the European directive, are triggering a brain drain. Where they can, scientists are shifting from the less-affluent south to the north of Europe. Where they cannot, many are abandoning the continent altogether.

Spanish policy-makers are even denying the problem exists, despite the clear collapse in employment opportunities and the visible emptying of research centres. If the lack of opportunities continues, more and more European scientists will simply leave research.

Europe's research commissioner deserves a chance to improve the situation. But it is telling that Moedas's guidance letter from the commission's president-elect, Jean-Claude Juncker, does not mention the need

to address budget cuts or the brain drain. Instead, it asks him to focus on applied research, and in particular on boosting the participation of the private sector and of small and medium enterprises.

Despite what some politicians believe, applied research is unlikely to have much immediate impact on the market. Marketable research products are the low-hanging fruit of an intricate research tree, and undermining basic research will slowly kill the roots.

Ultimately, Europe's approach ignores how the scientific process works. Research requires experiments, and not all will be successful. Excellence is the tip of an iceberg: it is prominent only because of the support of the body of work beneath.

Instead, science funding at both the national and the continental levels is going to a diminishing number of well-established research groups.

This is not conducive to the diversified portfolio that Europe will need to face the societal and technological challenges of tomorrow. It also increases the gap between member states, because those well-funded research institutions are systematically recruiting a selected group of grant holders.

Research cannot follow political cycles: it is about investment in the future. And it should not just serve the economy, but also aspire to increase knowledge and social welfare, including for those with no resources to pay the bill.

Too many of those in positions of power in Europe have chosen to ignore this. We are determined to remind them. We call on you to help us. ■

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