

Slowdown will undermine reform

France's new research minister faces tough challenges in introducing much-needed changes into the research system. Her difficulties are compounded by impending budgetary constraints.

"Sacrifice research, and the entire future of our country is compromised." So proclaimed French presidential candidate Jacques Chirac during this spring's election campaign. If elected, he said, he would launch "a national mobilization plan for research and innovation", and boost research spending from 2.15% to 3% of GDP by 2010. The thousands of scientific jobs created under the previous government of Lionel Jospin "fell far short of needs".

But 2010 is a long way away, and reality is biting now. By mid-September, Jean-Pierre Raffarin, Chirac's prime minister, must somehow find billions of euros from a sluggish economy to pay for his boss's lavish election promises. As a result, research is set to be sacrificed in the September budget. The finance ministry is reported to have called for steep reductions in public research spending and cuts in research jobs. These have been forcefully resisted by Claudie Haigneré, astronaut and minister for research and new technologies (see page 712). Last weekend, Raffarin promised that the budget would not be cut, but maybe the best Haigneré can hope for is a flat or miserly budget.

She has done the calculations. To reach 3% by 2010, and taking the most optimistic scenario, whereby private-sector spending on research would increase three times faster than the public spend, the former would need to climb by 8.6% every year until the end of the decade, and public spending by 4.2% annually. The government, with the industry ministry in the driving seat, hopes to encourage such incredible growth in research spending, in particular in the life sciences, by subsidies and tax breaks. But by failing to boost the public sector, the government risks a dangerous imbalance.

Seven weeks into her job, Haigneré cannot be blamed for the poor budget prospects looming. Given the political context it is doubtful

that any science minister could have won a decent budget. The big question about Haigneré, a political neophyte, is whether in future she will be able to defend research in the ferocious world of politics.

Each new science minister in France faces the same old challenge: transforming a top-heavy, overly complex, slow-moving ship into a nimble craft where money and people can circulate more freely and be concentrated on the best science. In that context, Haigneré may be exactly the kind of minister France needs. Rather than rearranging deck-chairs on a sinking ship — almost all the key science indicators show France lagging behind most of its European neighbours — Haigneré seeks to pursue a productive strategy in which the ministry and the research community identify critical areas where tangible progress can realistically be achieved.

The areas emphasized so far are those needed to transform France's centralized and feudal system from within, by injecting flexibility: freeing up the vital force of young scientists by concentrating resources on giving independence to the brightest minds with the best projects, and seeking to redistribute more funds competitively on the basis of excellence, rather than sharing among existing labs. Haigneré wants to put an end to premature recruitment to full-time posts by creating an interim postdoctoral phase offering attractive conditions to young scientists who must then prove their worth.

Impending research spending will be a far cry from Chirac's pledge of a "historic commitment going beyond anything done in the past". This will not only compromise France's future, but also make Haigneré's already difficult task of shaking up France's rigid and inflexible science even harder, as there will be no sugar to help swallow the necessary pills. ■

Save starry nights

Cities should stop lighting up the heavens.

From the Ponte di Rialto in Venice on a clear night you can see every star in the constellation Ursa Minor. In nearly all of the world's other cities, from New York to Sydney, you can't. Venice has maintained the privilege of a starry sky because it has no traffic, and because public lighting has, until now, always been subdued, in keeping with the city's romantic architecture. But even Venice's night sky is now threatened by a new mayor who supports the introduction of mercury street lighting.

Fortunately, hopes that light pollution will not worsen are not completely forlorn. Over the past decade, the small but passionate lobby for legal standards in outdoor lighting, spearheaded by the International Dark Sky Association in Tucson, Arizona, has witnessed the passing of lighting laws and ordinances in several US states, counties and cities, and more recently in Europe, notably in Lombardy and other Italian regions. The Czech government passed a lighting control law in February this year; it is the only such national law in existence.

The stars are our rightful heritage. Moreover, light pollution interferes with ground-based astronomy, disturbs human sleep and upsets nocturnal wildlife. None of that moves the hearts of legislators,

however: they tend rather to be swayed by the economic argument that light thrown sideways and upwards is wasteful of energy.

Most of the laws relate only to state-funded lighting, and set a limit on light pollution, rather than banning it completely, even though there is now no shortage of companies that can provide pollution-proof fittings. More and tougher laws are required to meet even the modest goal of not worsening light pollution levels, and this requires a lobby that will be taken seriously. The International Dark Sky Association has turned to UNESCO (the United Nations Educational, Scientific and Cultural Organization) for support. UNESCO has given its powerful 'world heritage' status to 730 cultural and natural sites worldwide — Venice among them — and initially wanted to get the night sky on the list. But its own rules require that the heritage to be protected belong to a particular government.

UNESCO is apparently considering a proposal to create a list of heritage sites that nobody owns, such as the oceans and sky. Human health might not be damaged by a lack of starlight, but the quality of urban citizens' lives will be significantly diminished if the night sky is available to them only in planetariums. ■