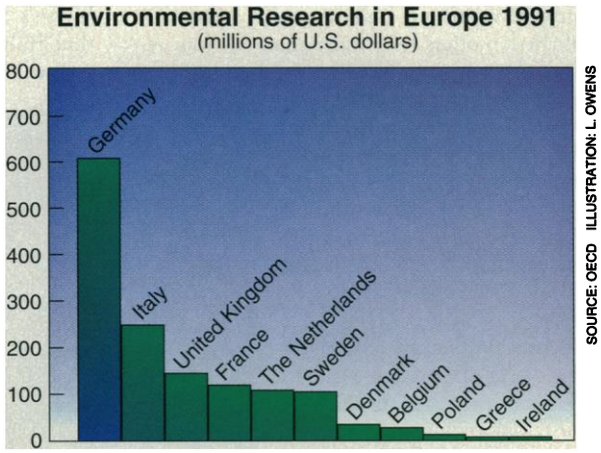
GERMANY

Environmental R&D Shakeup Rattles the National Labs

BERLIN—Germany's national laboratories are nervously awaiting the publication of a report on environmental research in the country. They have good reason to be concerned: *Science* has learned that the report, being prepared for the science ministry (BMFT) by the independent Science Council, is likely to recommend shifting some environmental R&D money away from the national labs, and it may call for one of the labs to be broken up. Such a move could be a big blow for the labs, which have moved heavily into environmental research in recent years. And what is happening here could hold some lessons for the United States.

Like the U.S. national labs, Germany's big government laboratories have seen their core business shrink. Germany's national labs were born in the 1950s with the goal of developing civilian nuclear power. As enthusiasm for atomic energy waned in the 1970s, many of the labs, which then numbered 13, shifted their activities toward environmental research—just as the U.S. labs are doing now that weapons research is declining. The KFK nuclear research center at Karlsruhe (which has nearly 4000 staff), for example, now devotes 27% of its resources to environmental R&D, the single largest discipline.



Clear lead. Germany is Europe's big spender.

It turned out to be a smart move. Spending by Germany's federal government on environmental R&D has grown from DM509 million ($293 million) in 1982 to more than a billion last year, and Germany spends more in this area, in real terms, than any other country, according to a study published last year by the OECD (see table). In 1990, Germany even outspent the United States on environmental R&D ($370.5 million compared to the United States' $333.9 million), despite having one-third the population.

But politicians are now starting to ask if Germany is getting value for its money. Last year, the BMFT asked the Science Council, an independent advisory body to both federal and state governments, to take a hard look at environmental research in Germany. The task force set up by the council carried out a comprehensive assessment of the field, from top to bottom, taking in national labs, government institutes, and universities, as well as the independent Max Planck and Fraunhofer institutes. The draft report, submitted by the task force in November and now being considered by the council, is expected to be a blueprint for the restructuring of environmental research in Germany.

The draft report is said to be critical of the quality of some research. "With the funds available, environmental research can clearly be improved," says Gotthilf Hempel, former director of the Alfred Wegener national laboratory for marine research, who heads the Science Council task force. Hempel says the task force is not recommending changes in funding: What is needed is more of a change of direction. "In some areas, things are getting a little bit boring," he says. Much of the research has focused too much on local conservation issues and needs to broaden its horizons to include socioeconomic aspects, such as environmental audits, and the global dimension of ecosystems if it is to provide the basis for policies and regulatory decisions. "You've got to look outside the fence of your own wetland with its fire salamander, valuable though this species may be," Hempel says.

By far the largest chunk of Germany's environmental R&D funding is channeled through the BMFT: 67% of this year's total. Just over half of this then goes straight to the national laboratories, of which there are now 16. The main proposal from the Science Council's task force is expected to be that the BMFT should spread these funds around more, adopting a more interdisciplinary approach based around ecosystem research centers at universities.

The task force's reforms are expected to hit hardest at one national laboratory in particular: the GKSS research center at Geesthacht on the River Elbe near Hamburg. This lab was set up in 1956 to develop nuclear-powered cargo ships, but environmental research is now its main discipline, dwarfing materials research and chemical process technologies and occupying 48% of the 850 staff and consuming 44% of the lab's $65 million budget.

Science has learned that the task force's preferred option is to have the GKSS dismantled into separate independent institutes, either affiliated with a university or run jointly by federal and state governments. Staff at GKSS, not surprisingly, oppose the change and it is more than likely that the states, or länder, will too, because a more broad-based approach would add to their costs. Environmental research comes cheap for the länder when it is under the umbrella of the national labs, because the BMFT foots 90% of the bill. A joint federal/länder institute would split the costs half and half while the länder have to support university institutes on their own.

The national laboratories are similarly unenthusiastic about the proposed changes. Joachim Treusch, who chairs the Association of National Laboratories and is scientific director of the KFA nuclear research lab at Jülich, says that interdisciplinarity is "a very reasonable idea," but why should the national labs, which already practice it, lose out to the universities, which have been notoriously weak at it? "In this cross-cutting approach, with chemists, physicists, engineers, and bioscientists working together, big science certainly does a better job," he says.

The national labs also face a threat from within their own ranks. After the reunification of Germany, a new national laboratory dedicated to environmental research was cobbled together from remnants of the East German Academy of Science. But the UFZ environmental research center at Leipzig-Halle has so far received only meager funding: just one-third of that which goes to the KFK in Karlsruhe (DM48.5 million compared to DM142 million). The task force wants to beef up the UFZ, which will inevitably mean less money for its western cousins, a prospect that they do not relish. "Concentrating everything at one site under the label 'environment,' rather than optimizing the interaction over regional and disciplinary barriers, counteracts the idea of interdisciplinarity," Treusch says.

The established national labs have already begun to exert their considerable behind-the-scenes influence to limit the extent of the damage. They have time on their side: Plans to publish the report in January have been pushed back to May.

–Richard Sietmann

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