SWEDEN

Environmental Researchers Wait Anxiously for Salvation

As a fierce debate rages over who should control environmental science, researchers wait to see if their previously generous funding will be restored

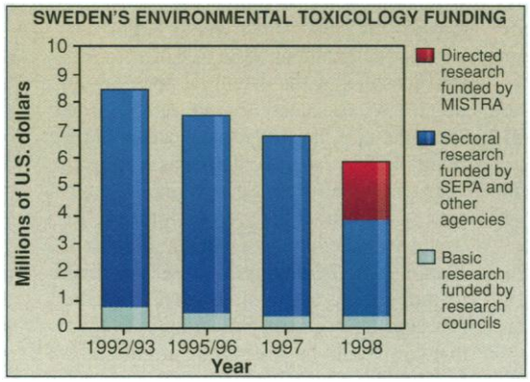
STOCKHOLM—Environmental research has long been among the crown jewels of Swedish science. Between 1990 and 1994, Swedish environmental research papers were, on average, the most highly cited in the world. And environmental scientists abroad say the ranking is well deserved: "Sweden is a world leader in environmental toxicology and environmental sciences generally," writes Canadian environmental chemist Ross Norstrom in a recent report on the state of the country's environmental research. Yet, over the past 2 years, many Swedish environmental researchers have been fighting for survival.

After decades of generous and stable funding, government support began to erode in the mid-1990s, and then, because of changes in the structure of Swedish research, a large part of environmental science was suddenly left without a benefactor. That prompted a fierce debate about how the field should be funded and who should set its priorities: the scientific community, environmental agencies, or industry? Last fall, the government finally reacted to the commotion. After election losses forced the ruling Social Democrats to seek support from the Green Party in parliament, the government promised new money for environmental studies. Now, researchers are waiting nervously to see if the promised funding will make up for previous losses and—equally important—who will be calling the shots.

The problems started when one of the field's major funders, the Swedish Environmental Protection Agency (SEPA), after years of cuts in its overall budget, decided to drop all funding of research. SEPA argued that the publicly funded but independent Foundation for Strategic Environmental Research (MISTRA) should pick up the tab. MISTRA was not pleased to have SEPA's projects foisted on it, and researchers were not happy either. Under SEPA, they had great influence in setting priorities, while MISTRA, in contrast, supports mostly large directed research programs that must be of long-term benefit to Swedish industry. Nevertheless, MISTRA became, by default, Sweden's major funder of environmental research.

Many researchers simply found that they did not fit in, especially those working on environmental toxicology who were hunting for new environmental problems or trying to get a better grip on existing ones. "Research that had been going on for a long time, they saw as already done," says Marie Vahter, a professor of environmental medicine at the Karolinska Institute. Temporarily, MISTRA made an effort to keep some internationally recognized researchers in their jobs, such as marine toxicologist Mats Olsson of the Museum of Natural History in Stockholm, a key player in connecting reproductive problems in Baltic seals with polychlorinated biphenyls (PCBs), and aquatic toxicologist Anders Södergren of Lund University, an expert on the impact of effluents from the pulp and paper industry.

Apart from concerns over their jobs, some scientists worried that MISTRA's industry focus would steer research away from areas that might be detrimental to business. As an example, environmental chemist Åke Bergman of Stockholm University cites the case of brominated flame retardants: Although they show up both in wildlife and in human breast milk and their PCB-like structure has raised concern about toxic effects, MISTRA only very reluctantly included them in its program for risk management of chemicals. "The development recently has been that industry has forcefully taken over a large part of the initiative in deciding what environmental research should be done," says Bergman.



SOURCE: FRN

Some researchers also argued that the funding shifts could undermine Sweden's efforts to negotiate strict international environmental controls. Vahter says Sweden's strict limits on cadmium in fertilizers and certain consumer products, for example, are based on research that began in the 1950s. "If the cadmium research is discontinued, politicians will lose their scientific backup," she says, adding that the "gentlemen at MISTRA thought we knew enough about metals by now." Responding to the criticism of Vahter and Bergman, Göran A. Persson, head of MISTRA, says that "the researchers haven't shown that their projects will create new opportunities in addressing the problems."

Many of the researchers' concerns about the state of environmental science were echoed in two critical reports, issued in late December. The first, from the Swedish Council for the Planning and Coordination of Research (FRN), focused on environmental toxicology. It showed that funding for the research in this field previously supported by SEPA dropped by 37% when MISTRA took over, and warned that the cuts are threatening environmental policy and Sweden's ability to play a leading role in international environmental negotiations. To remedy this, the report recommended that funding for environmental toxicology together with a few other related areas be roughly doubled, with an increase of $9.6 million a year. The second report, from SEPA, took a broader look across all environmental research. It recommended that the current funding of roughly $70 million be boosted by $13 million, $8 million of which it said should be earmarked for scientific support of Sweden's international environmental negotiations.

The government's response to these proposals will come in mid-April, when it releases its new budget. Researchers are hoping not only for the increase in funding promised last fall but also for a decision on who should take the lead. SEPA suggests that, if new money is forthcoming, it should again take a lead in supporting environmental research, leaving MISTRA with its original problem-solving approach. But researchers are not so keen. "The environmental research community no longer trusts SEPA as a funder of research," says Bergman.

In a letter sent to SEPA and FRN in early December, a large number of researchers endorsed an alternative strategy: Create an independent environmental research council. Both arrangements, however, would be at odds with a recent suggestion from a committee of parliamentarians to streamline Swedish research funding into four research councils. Under that proposal, environmental science would probably end up with the natural sciences (*Science*, 20 November 1998, p. 1401). Although researchers are confident that salvation is on the way, at least in the form of increased funding, for a few more months they can only guess from which direction it will come.

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