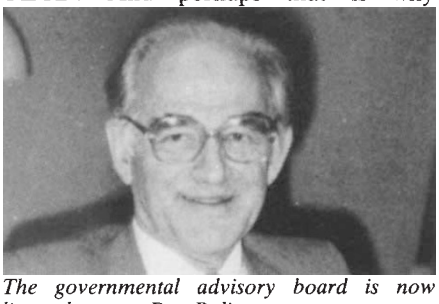
Policy

Keeping a lead in R&D

WITH its glossy cover and text illustrations, and published in word-perfect English, there is an immediate temptation to approach the 1987 Swedish government research bill with caution. What, one wonders, is it trying to sell? The answer is a high-grade product of the consensus politics that dominate Swedish affairs.

The bill, which has passed through parliament, lays out the policy, priorities and budgetary increases for the next three years of government-financed research and development, and is the third in a line of research and development bills in the past five years. Perhaps this is the kind of activity one would expect from a government that runs the most R&D intensive country (with a budget that is about 2.7 per cent gross domestic product) in the OECD. And perhaps that is why



The governmental advisory board is now listened to, says Bert Bolin.

Swedish science policy is both coordinated and created within the cabinet office of the prime minister.

Indeed, the current prime minister, Ingvar Carlsson, takes personal responsibility for the coordination of science and technology policy, as he did when deputy to Prime Minister Olaf Palme before his assassination in February 1986. Carlsson also chairs the Government Research Advisory Board which has regained its former importance since the Social Democratic Party returned to power in 1982, according to board member Bert Bolin, who also acts as personal advisor on science to the prime minister and is Professor of Meteorology at the University of Stockholm.

Apart from Carlsson and Bolin, the board includes the ministers of education and industry together with six scientists chosen in their personal capacity. There are four meetings a year that deal with topical matters and four that consider longer-term issues, which are not necessarily science-related. Biotechnology has, of course, been on the agenda but so has the relationship of religion to society. And although the board is not decision making, it clearly influenced recent decisions both to channel more government funds to the basic sciences that underlie biotechnology and to finance two new theology chairs.

Government research policy, as it is enacted in the bill, has to take into account the demands of twelve ministries, among which three are the most demanding. Of the SEK 11,350 million government R&D budget for 1986–87, 30 per cent was channelled through the Ministry of Education and Cultural Affairs to support higher education institutes and three research councils — the Medical Research Council (MFR), the National Science Research Council (NFR), and the Council for Research in Humanities and Social Sciences (HSFR). Also funded by this ministry is the Council for Planning and Coordination of Research (FRN) which cooperates both with the research councils and with sectorial bodies.

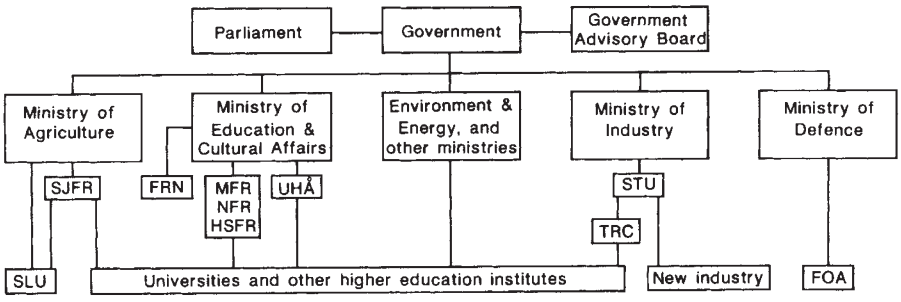
A further 16 per cent went to the Ministry of Industry and its National Board for Technical Development (STU), which incorporates a Technical Research Council (TRC) and 25 per cent was given to the Ministry of Defence which supports the National Defence Research Institute (FOA). Next in line is the Ministry of Agriculture, which takes 6 per cent of the budget and runs both the Swedish University of Agricultural Science (SLU) and the Swedish Agricultural Research Council (SJFR).

As in most developed countries, the research councils hold the key to success in academic research. It is not impossible to continue on a small scale with university funds or even on a large scale with external support for applied research but to mount an effective programme of basic scientific research it is necessary to obtain a grant from MFR, NFR or SJFR. "Our funds are small but strategically very important", says Henry Danielsson, who as MFR secretary, distributes some SEK 200 million a year, about 10 per cent of government spending on medical research.

Naturally he would prefer to have a larger slice of the cake, but is unlikely to do so while the country maintains its very pluralistic approach to research. Some medical research, for example, is commissioned by at least three ministries apart from Education and Cultural Affairs.

An equally strong policy, however, ensures that most mission-orientated (or sectoral) research is carried out in universities (and other higher education establishments) rather than in separate institutes set up by the relevant ministry. Such institutes, says Bolin, are notoriously slow at adjusting their research to circumstances, particularly because they tend to have no flow-through of graduate or postgraduate students. By concentrating all resources on the universities a critical mass is more likely to be achieved in a small country, he adds.

Widespread criticism, nonetheless, of the value of short-term sectorial research has led to more stringent evaluation procedures. For example, overseas evaluation is employed by STU. There is also a marked move towards persuading the sectorial funding agencies to support academic posts, from postdoctoral positions to 'extra' chairs (see page 340). □



The Swedish way of controlling higher education and research. Sectoral research institutes are noteable for their absence.

Outsiders look in

SENSITIVE to the possible shortcomings of relying solely on internal evaluation in a country as small as Sweden (which has a population of 8.5 million), the NFR supplements its standard peer review of grants with a scheme of regular external evaluations of the research programmes it supports. Typically, four overseas scientists, accompanied by an NFR rapporteur, undertake a whistle-stop tour of most of the grant holders, spending an hour with each and then writing a frank appraisal of their work, which is later published. Sample comments on two individuals from a 1986 evaluation of physical chemistry read: "This is a classic example of a case where an initially good idea, worth a try, and a committed man should have been redirected or terminated earlier, in his own interests" and "the Evaluation Committee . . . advise that judicious exercise of the big stick which goes with office can sometimes work wonders".

Professor Carl Nordling, recently appointed secretary general of NFR, says that the evaluations are not the only parameter but undoubtedly the most important by which anyone is judged. Needless to say, they are also compulsive reading material for other academics, and influential in private foundations and in ministries. □