

Hopes rise for redistribution of funds

THE future of research in South Africa is likely to depend heavily on the impact of a government white paper on science and technology, approved by the cabinet in September, which will bring major organizational changes and signal greater reliance on private-sector research.

The initiative has been welcomed by the scientific establishment as an attempt to secure a more effective distribution of the science vote, concentrating funds on the most productive areas of research. George Ellis, president of the Royal Society of South Africa, says that he is "very upbeat" about the white paper, which he describes as a "terrific statement".

But others doubt whether, given the general and continuing decline in funding, the reforms proposed in the paper will be sufficient to ensure the future health of South African science.

Three major policy changes are being proposed. The first is that a National Research Foundation (NRF) should be given responsibility for all research carried out by universities and other tertiary educational institutions.

The organizational would be created by merging the Foundation for Research Development (FRD), South Africa's main funding agency for science and technology, with the much smaller grant-giving responsibilities of the Human Sciences Research Council (HSRC).

The second change is the creation of a National Innovation Fund (NIF), operating under the aegis of a National Advisory Council on Innovation. This is intended to stimulate innovative research, and respond rapidly to changing research and technological priorities.

The third change is that the activities of the country's seven science councils will be regularly reviewed by both scientists and end-users. This will effectively replace the current system of relative autonomy, under which the councils set and follow their own agendas without having to account publicly for how they spend their money.

At present, 57 per cent of the science vote (see table, below left) is spent — much of it relatively unproductively — by the Agricultural Research Council and the Council for Scientific and Industrial Research. Under the white paper's reforms, the budget will now be redistributed among the various research councils, the NRF and the NIF.

In addition, both the research councils and the NRF will be able to apply to the NIF for additional funds for specific programmes. Overall responsibility for deciding how the money is divided up will lie with the Ministerial Committee on Science and Technology (MCST), a cabinet committee on which all ministers whose portfolios have a research component will be represented.

How effective will the reforms be? Many scientists warn that organizational changes will not be sufficient to stimulate South African science. Khotso Mokhele, president of both the FRD and the Academy of Sciences of South Africa, warns that agency funding has fallen to critically low levels.

Within the FRD core programme, for example, the average value of grants to university researchers fell from R48,000 to R20,000 (at 1989 values) between 1989 and 1995. The real value of grants has decreased even more, as a result of the declining exchange rate over this period.

The government plans that funding redistribution will be made for the first time in 1998, by which time all new institutions involved in allocating funds to researchers and their institutions should have been set up. Rob Adam, deputy director-general in the Department for Arts, Culture, Science and Technology, says that comprehensive reviews of the activities of each of the councils will be carried out next year, and assessed before reallocations are made.

Mokhele is enthusiastic about the proposed single funding agency, the NRF, "provided that peer review is retained as an essential component of the system". He concedes that the focus of such a review need not be a rating of the scientist submitting the proposal — as currently practised by the FRD — but that the project proposal itself could become more important. "But all this will have to be decided by the new foundation," he says.

The foundation will have four divisions. These will be responsible for natural sciences and engineering; social sciences and humanities; health sciences (encompassing the medical and health-support work of the FRD and HSRC, but not the Medical Research Council, MRC); and agricultural and environmental sciences (including the agricultural projects of the FRD, but essentially a new component of funding).

Interestingly, the Department of Health

appears to have won a battle to prevent the grant-awarding responsibilities of the MRC being taken over by the NRF. "Our contention is that in health research it is optimal to integrate in-house functions with those performed by the tertiary education sector," says Tony Mbeu, the MRC's group executive for research.

Ironically, although the white paper assumes that the focus of investment in R&D needs to shift away from government-funded activities to those in which the private sector has an interest, it does

not suggest incentives to encourage this. "The engagement of the corporate sector has yet to be fully secured," says Nick Segal, president of the Chamber of Mines.

The white paper rejects the suggestion of tax breaks for private-sector R&D. The govern-

ment's explanation is that its revenue collection services lack the capacity to administer such a system. Equally plausible, say some, is that an Inkatha Freedom Party minister does not carry enough weight in cabinet to prevail over the minister of finance. But Lionel Mtshali, the minister responsible for science, says he "will put up a fight for tax concessions, both for museums and private-sector R&D in science and technology".

Both military research funded from the defence budget — currently costing R500 million — and the activities of the Atomic Energy Corporation (AEC), which this year had a subsidy of R345 million from the Department of Mineral and Energy Affairs, are likely to come under scrutiny.

One specific recommendation of the white paper is that the AEC's SAFARI-1 nuclear reactor should be declared a national facility. The proposal, which originated from the corporation itself, will formalize the arrangement whereby university scientists have free access to the reactor.

The political symbolism of declaring SAFARI-1 — which is being loaded with highly-enriched uranium from South Africa's now-dismantled nuclear weapons — a national facility is lost on no-one. But the wisdom of the decision has been questioned by some of the country's physicists, including Fritz Hahne, dean of the science faculty at the University of Stellenbosch. If it becomes necessary to choose between SAFARI-1 and the controversial National Accelerator Centre (see page 13), he says, "the latter has far more potential". □



Mtshali: supporting calls for tax breaks.

Allocation of the 1996/7 Science Vote (US\$1 = 4.7 rand)

Council	Millions of rands
Agricultural Research Council (ARC)	296
Council for Scientific and Industrial Research (CSIR)	267
Human Sciences Research Council (HSRC)	88
Foundation for Research Development (FRD)	86
Council for Minerals Technology (Mintek)	73
Council for Geosciences	60
Medical Research Council (MRC)	58
National Accelerator Centre (NAC)	38
South African Astronomical Observatory (SAAO)	9
Hartebeespoort Radio-Astronomical Observatory (HRAO)	5
Total	980