

CSIRO faces a 'demand-led' future

Australia's main research agency has responded to the prospects of continuing budgetary stringency by redefining its strategic approach.

Sydney

Australia's most powerful research organization, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), is shifting resources and staff away from fundamental research towards the 'strategic' and applied end of the research spectrum.

Job losses are expected in disciplines no longer considered a priority and in research groups not considered suitable for redeployment to other areas. The total staff of CSIRO is close to 7,000, but in four of its 23 divisions — telecommunications/industrial physics, forestry, building and food science — management has already said 89 jobs are to be cut.

CSIRO officials argue that "scope for some purely curiosity-driven research" will remain. But apart from radioastronomy, in which Australia continues to derive considerable international prestige, the days of broad support for basic research appear to be over.

The main goal of CSIRO will now shift to supporting "wealth creation and environmental sustainability for Australia". Research will be run like an investment portfolio, and the growth of research will be 'demand-led' by clients and research collaborators.

Government stringency

The organization, set up in 1926, has been unusual in maintaining a brief across most research disciplines (apart from medical research) and in blending basic and applied science. In 1991, its then sister body in New Zealand was split into more specialized units, but CSIRO has resisted such moves.

How long this can be sustained remains to be seen as its effort becomes increasingly determined by commercial liaisons, products and services that are favoured by government but protected by confidentiality agreements.

But CSIRO's executive committee has accepted that the government is unlikely to reverse the budget stringency it has imposed over the past four years. According to a plan for 2000–2003, released to staff by chief executive officer Malcolm McIntosh shortly before he went on sick leave last month for a cancer operation, its research strategy will be increasingly driven by commercial considerations.

CSIRO's research is currently performed in 23 specialist divisions. But recently a parallel network of 23 different sectors grouped in five 'alliances' has been established to coordinate multidisciplinary attacks on strategic problems, such as the increasing salinity of agricultural land.

The new plan presents the first compre-



Jobs for burning: it has proved difficult to get the forestry industry to invest in research.

hensive test of this reorganization. Each sector draws on research from several divisions, briefed by advisory committees, with strong input from industry, that contributed to the most intensive internal review of the organization's strategy for several years.

CSIRO's operations are financed from an annual government appropriation of A\$450 million (US\$295 million), augmented by income from contracts with private industry and other public sources, which increased its total budget to A\$700 million last year.

The government previously set CSIRO a target for external earnings of 30 per cent of its block grant. But the organization exceeded this, achieving 33 per cent last year and aiming for an average of 40 per cent next year across all divisions and sectors.

In defending the changes, Colin Adam, a metallurgical engineer acting as chief executive during McIntosh's absence, says that basic research should be focused in universities. In contrast to the government's green paper earlier this year, he also expresses doubt over the government's expectations that universities can significantly boost their earnings from industry (see *Nature* 400, 703; 1999).

"Universities should be heavily funded by taxpayers," says Adam. But he admits that tapping substantially into private resources will be "a big task", given that industry has been decreasing its own research and develop-

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ment (R&D) following the government's controversial cut in a tax incentive.

Increasing competition ahead

In turn, university leaders, who did not play an institutional role in the CSIRO review, are expecting increasing competition between CSIRO and academic researchers for industry funding.

Peter Cullen, president of the Federation of Australian Scientific Technological Societies and professor of resource and environmental science at the University of Canberra, welcomes CSIRO's determination to set a strategy and be selective. But he foresees "a bitter environment" over price competition as "CSIRO and universities battle in the face of falling industry investments in R&D".

CSIRO's plan states that any area of research that fails to attract sufficient support from industry should be dropped. Applying this criterion, major cuts in the allocation of funds will reduce research in forest products, biodiversity, meat, dairy, aquaculture, telecommunications and industrial physics.

Criticism from staff is expected, and there has already been a protest at the forest products section of the forestry division, where 37 of the 83 staff in its Melbourne laboratory are to be made redundant. But any murmurings of discontent are likely to be subdued. Peter O'Donoghue, secretary of the union for CSIRO staff, claims staff feel reluctant to speak out against the plan.

Adam says it was "almost impossible" to get the forestry industry to invest in research and that this sector therefore had to be reduced. By contrast, allocations to exploration, mining and minerals, which Adam manages, have risen as they have attracted stronger industry support.

CSIRO's executive committee has agreed to give the biodiversity sector, which draws on work from eight divisions, a second chance to argue against what its researchers feel is a raw deal resulting from A\$4.9 million in cuts. Brian Walker, chief of the division of wildlife and ecology, says this shows the challenge facing those who are unable to persuade the executive that a lack of support from "customers and stakeholders" can be corrected.

Walker describes this as the classic "dilemma of the commons", arguing that the private sector seems unaware of the risks to the productivity of its land as biodiversity diminishes, and so is unwilling to pay for research to protect its sustainability. Others are waiting to see whether CSIRO's broader strategy can avoid a similar fate.

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