

Commonwealth Scientific and Industrial Research Organisation (CSIRO) Submission to Productivity Commission Review of Cost Recovery by Commonwealth Agencies

December 2000

Introduction

The Commonwealth Government has asked the Productivity Commission to review cost recovery arrangements across its regulatory, administrative and information agencies, and to develop guidelines for the future application of cost recovery.

In this submission, CSIRO has provided information on its costing and pricing policy and suggested some issues for consideration by the Commission when drafting the guidelines. CSIRO's costing and pricing policy and related issues such as the external earnings requirement have been subject to extensive review over the past 10-15 years.

CSIRO would be pleased to provide comments on the draft guidelines once released.

Background

- CSIRO Functions

CSIRO is an independent statutory authority constituted and operating under the provisions of the *Science and Industry Research Act* (1949). Its main role is to carry out scientific research of benefit to Australia and to facilitate the application or utilisation of the results of that research. It is not a regulatory, administrative or information agency as such.

Other CSIRO functions relate to international scientific liaison, training of research workers, maintenance of standards of measurements, dissemination of scientific and technical information and the publication of scientific papers. A full list of the functions is at Attachment A.

- CSIRO also has responsibility under the National Measurement Act (1960) "to maintain, or cause to be maintained, such standards of measurementfor which there are Australian legal units....".

The scientific and related services offered by CSIRO are provided on a public good and commercial basis. The extent to which full costs are recovered depends on the type of service (please refer to the section on CSIRO Commercial Policy below).

In terms of regulation, CSIRO establishes, develops and maintains the physical standards of measurement for use by Government regulatory agencies. CSIRO is not however directly responsible for regulating the measures used by industry or for regulating any other activity.

The dissemination of information is through formal mechanisms such as reports, periodicals and papers and informal mechanisms such as CSIRO Enquiries, a national email and telephone enquiry service. This is an important but secondary function for CSIRO, which relates to the primary function of encouraging or facilitating the application or utilisation of the results of research. Much of the information service is as a public good.

For information on CSIRO's commercial activities and Service Charter please refer to the CSIRO website at <http://www.csiro.au>

- **CSIRO Commercial Activities**

CSIRO's commercial activities involve a complex portfolio of interactions and a wide variety of commercialisation vehicles, which are far more extensive than envisaged in a simple cost recovery or user pays model.

The principal methods of scientific collaboration, technology transfer and commercialisation take the form of services for private and public sector customers via:

- Contract and collaborative research: R&D to achieve specific market objectives or to fulfil a joint technology objective
- Consulting: advice on science and technology
- Licensing: commercialisation of intellectual property developed by CSIRO
- Technical services: testing and accreditation

The Organisation has powers to form partnerships and companies to facilitate the adoption of its technology (spin-off companies).

CSIRO also earns revenue through the sale of scientific and educational publications and from subscriptions to a science club for school children.

- **CSIRO Commercial Policy - Cost Recovery Policy**

CSIRO expects that commercial relations will result in:

- improved national and international competitiveness of the commercial enterprise;
- the exploitation of the research assigned to and/or carried out in the relationship to the benefit of Australia; and
- an equitable return on investment for all parties involved.

CSIRO provides services and products that are not readily available from other enterprises in the Australian market and expects to receive appropriate compensation for its contribution.

The Organisation's cost recovery philosophy is that the full-cost price should be known and should be charged unless there are public good outcomes in which CSIRO is prepared to invest. If there are no public good outcomes or the full benefit is to be appropriated by the user then the full-cost price should be charged. If full costs are not recovered then we are committing our own resources to the activity. The reasons for such a decision should be consistent with our mission, transparent and documented.

Cost recovery arrangements are one aspect of CSIRO's commercial policy. In principle, flexibility is needed to encourage sound commercial practices and to achieve the best outcomes.

All commercial activities in CSIRO are subject to the Commonwealth policy on Competitive Neutrality. For technical and consulting services the Government has made it mandatory for CSIRO to charge the full-cost price to ensure fair and effective competition. A summary of CSIRO's Costing and Pricing (Cost Recovery) Policy is at Attachment B.

The commercial policies are fully documented in the CSIRO Commercial Practice Manual, which is commercial-in-confidence.

- **Retention of Earnings**

Under the Triennium Funding Agreement with the Government, CSIRO retains all external earnings without any related reduction in direct appropriations, except for equity repayments of the net proceeds from the specified property sales.

Although the earnings are to off-set costs, the retention of earnings is an incentive for CSIRO and its staff to actively engage clients.

Rationale for Cost Recovery

Cost recovery, to an appropriate extent, is required in all of CSIRO's commercial activities but the main drivers are the development of technological capacity, building of stronger links with industry and other research users, and the delivery of national benefits.

The rationale for a greater emphasis on external earnings in CSIRO had its origin in the 1985 Australian Science and Technology Council (ASTEC) Review of CSIRO and the Government's decision to introduce an external earnings requirement in 1987-88:

- **ASTEC Review of CSIRO**

The ASTEC Review of CSIRO, '*Future Directions for CSIRO*' in 1985 (*emphasis added*) noted:

"It should be recognised that the role envisaged for CSIRO in performing contract research or participating in joint ventures is intended to complement the *general aim of fostering increased technological capability in industry*. It is not intended to be another way of providing a temporary public subsidy for individual firms. CSIRO should endeavour to stimulate and assist private research, development and consulting services. CSIRO should not duplicate services already available in the private sector nor act in such a way as to discourage the development of private sector bodies which might provide such services unless this is essential in ensuring the adoption of an innovation originating from CSIRO research. Because of the availability of the taxation concession for private expenditure on R&D in CSIRO, the Organisation should not provide a further subsidy for such services and should *endeavour to recover the full cost of any of its activities undertaken to benefit particular firms*. Arrangements for cost recovery may include, where appropriate, the right to share in the benefits from the exploitation of intellectual property.

This requirement might be waived where the expectation of a broader public benefit justifies an element of subsidy, for example, where market failure can be inferred or

where there is an opportunity to make a lasting improvement to the R&D capability of an industry partner. In such cases, the extent of and justification for any contribution from appropriation funds should be shown in the costing for projects.”

This Report had a major influence on the direction of CSIRO and its structure.

- **External Earning Requirement**

In 1987-88 the Government introduced an external earnings target for CSIRO to encourage stronger linkages with industry and other research users. External earnings from the private and public sector now accounts for 30% of CSIRO total revenue.

The level of external earnings required by Government has important science and industry policy considerations. For CSIRO, the major considerations include the purpose for which CSIRO is receiving the earnings (consistency with CSIRO’s mandate and direction) and whether full costs are being recovered (level of support from appropriation resources).

An inappropriate emphasis on achieving external earnings, as an end in itself, may distort research investment and commercialisation strategies. An emphasis on short-term earnings may also fail to maximise the longer-term benefits of R&D for Australia. For example, it could lead to less support for small to medium-sized enterprises and spin-off companies, which may have potential for greater returns to the nation (and perhaps CSIRO) in the long term. It could also influence the level of work on issues unique to Australia such as in agriculture and the environment, where knowledge cannot be sourced from overseas. (The importance of public good considerations to cost recovery guidelines is discussed later.)

An important principle in CSIRO’s triennium funding agreement with the Government is that the Government will “view external earnings targets flexibly to allow quality and relevance of the research output and general community benefit to be considered”. This flexibility enables CSIRO to balance the needs of the different Sectors and the stages of development of research programs and of the customers being served.

The external earnings requirement for science authorities was reviewed by ASTEC in 1994 (*On Target? Review of the Operation of External Earnings Targets for CSIRO, ANSTO and AIMS*) and by the then Department of Industry, Science and Tourism in 1998.

- **Other Reasons**

The other reasons for cost recovery in CSIRO reflect those identified by the Productivity Commission Issues Paper such as to prevent unnecessary use of certain services and to open certain activities to market-related forces to ensure their relevance to the needs of users and to improve their efficiency.

Cost recovery helps recover the cost of prior investment and, in cases where a profit is earned, enables investment in further or new research.

GUIDELINES FOR APPLICATION OF COST RECOVERY

CSIRO would welcome the opportunity to comment on the draft guidelines developed by the Commission during this inquiry.

At this stage, CSIRO would encourage the Commission to consider:

- net benefit:cost of cost recovery arrangements;
- importance of public good considerations; and
- role of funding bodies in ensuring appropriate pricing / cost recovery.

- Net Benefit:Cost

The Competition Principles Agreement between the Commonwealth and the State/Territory Governments (*clause 3.6*) notes that Governments are only required to implement the principles of competitive neutrality to “the extent that the benefits to be realised from implementation outweigh the costs”.

This principle could be applied to all areas of public policy but is particularly relevant to the proposed guidelines for cost recovery.

The benefit:cost analysis could take into account the cost of administering cost recovery arrangements, the ability of users to meet cost increases and implications for their level of output and, the impact of charges on the demand for services, access to services and general behaviours.

In the context of this Review, the Commission might wish to look at the proposal to recover the full cost of the Office of Gene Technology Regulator. The policy makers have developed various models and are working through a number of issues.

- The core business of the Regulator is to regulate a particular type of research dealing with gene technologies, where there is a small but emerging industry base. Up to this point, there has been a voluntary, but effective control system in place, funded by the Government. The proposal now to recover full costs could have implications for innovation in Australia and the adoption of this new technology.

In general, there is concern that the cost recovery aspect of the new arrangements could inadvertently discourage the very industry that would have been expected to fund the activities of the Regulator. Should some of the multinational companies operating in Australia decide to withdraw their Australian research base the share of the costs to the remaining users could increase. As one of the major current users, CSIRO is concerned that initially it might have to pay a major share of the recoverable amount. Whilst part of the cost may be passed onto external clients through higher prices, appropriation funded public good research is unlikely to be supplemented by the Government during the current funding triennium, potentially leading to net loss of research capacity.

- Consideration of Public Good

The guidelines need flexibility to recognise the public good role of some agencies.

For science agencies, there is a legitimate role for government in supporting public good research and research in which individuals or companies are reluctant to invest because they cannot appropriate the full benefit (market failure). The rationale for Government involvement in R&D and for supporting the spillover benefits of R&D was discussed in the 1995 Industry Commission Report on R&D.

Much of CSIRO's activities involve a public good and this has been expressly recognised by the Government in its decision on the application of competitive neutrality to CSIRO's research services (refer Attachment B).

The proposed guidelines need to recognise that the economic, social and environmental benefits of R&D come through the effective transfer of technology and knowledge to private and public sector clients. This transfer not only occurs through 'user pay' arrangements but by other means such as informal contacts with industry, staff exchanges and the dissemination of information.

Many public good benefits could be constrained by an over emphasis on cost recovery as an end in itself. Indeed, in some environmental and social areas the widespread dissemination of knowledge is vital (such as information on the value of certain nutritional products in fighting disease).

In this context, an emphasis on government investment rather than assistance or subsidy may be appropriate, that is, as discussed, the full-cost price should be known and only discounted to the extent that government is willing to invest in public good outcomes. If there are no public good outcomes or the full benefit is to be appropriated by the user then the full-cost price should be charged. This is the premise for CSIRO's costing and pricing policy.

- **Role of Funding Bodies**

The Commission could consider the influence of funding bodies on prices charged by service providers. Whilst pricing should be subject to competitive pressures, where appropriate, there needs to be greater recognition that organisations like CSIRO are subject to the Commonwealth's competitive neutrality policies and must use full-cost pricing.

As an example, CSIRO has found that some Primary Industry R&D Corporations will not meet all the overhead costs (including depreciation on equipment) associated with certain projects. These corporations are often the major or sole funder of research on behalf of that industry so R&D providers must either decline the work or fund a greater proportion of the research from their own resources. In CSIRO's case, under its policy on competitive neutrality, this would only occur when 'national interest considerations' justify the investment of the Organisation's appropriation funds or other resources.

The Coordination Committee on Science and Technology Report on *Costing and Pricing of Public Sector Research* in 1992 noted that underpricing becomes a problem when "it is done by either the funder or the performer to gain some short-term benefit, while adversely impacting on the longer-term viability or capability of the performer" (CCST p 14).

The dilemma for individual research providers is that they have often made a considerable investment (staff and infrastructure) in a field of study and cannot afford to turn away the business and lose the external funding. (Some may also need to meet external earnings targets.) In the long term, this type of leverage on a research provider's appropriation funding could mean that less funds are available to maintain the organisation's intellectual and physical capital. It restricts the organisation's ability to fulfil its own research agenda, with impacts on future delivery of national benefits.

Cost recovery guidelines need to reflect the commercial environment in which they are being applied and the customer-provider relationship.

CSIRO

December 2000

References

- Australian Science and Technology Council (ASTEC) *Future Directions for CSIRO* (AGPS, Canberra, November 1985)
- Australian Science and Technology Council (ASTEC) *On Target? Review of the Operation of External Earnings Targets for CSIRO, ANSTO and AIMS* (AGPS, Canberra, February 1994)
- Department of Prime Minister and Cabinet, Office of Chief Scientist *Costing and Pricing of Public Sector Research : a paper prepared for the Coordination Committee on Science and Technology* (AGPS, Canberra, January 1992)
- Industry Commission *Research and Development* (Report No.44, AGPS, Canberra, May 1995)
- Commonwealth Competitive Neutrality Policy Statement, June 1996

Functions of CSIRO

The functions of the Organisation are:

- (a) to carry out scientific research for any of the following purposes:
 - (i) assisting Australian industry;
 - (ii) furthering the interests of the Australian community;
 - (iii) contributing to the achievement of Australian national objectives or the performance of the national and international responsibilities of the Commonwealth;
 - (iv) any other purpose determined by the Minister;
 - (b) to encourage or facilitate the application or utilisation of the results of such research;
 - (ba) to encourage or facilitate the application or utilisation of the results of any other scientific research;
 - (bb) to carry out services, and make available facilities, in relation to science;
 - (c) to act as a means of liaison between Australia and other countries in matters connected with scientific research;
 - (d) to train, and to assist in the training of, research workers in the field of science and to cooperate with tertiary education institutions in relation to education in that field;
 - (e) to establish and award fellowships and studentships for research, and to make grants in aid of research, for a purpose referred to in paragraph (a);
 - (f) to recognise associations of persons engaged in industry for the purpose of carrying out industrial scientific research and to cooperate with, and make grants to, such associations;
 - (g) to establish, develop and maintain standards of measurement of physical quantities, and in relation to those standards:
 - (i) to promote their use;
 - (ii) to promote, and participate in, the development of calibration with respect to them; and
 - (iii) to take any other action with respect to them that the Chief Executive determines;
 - (h) to collect, interpret and disseminate information relating to scientific and technical matters; and
 - (i) to publish scientific and technical reports, periodicals and papers.
- (2) The Organisation shall:
- (a) treat the functions referred to in paragraphs (1) (a) and (b) as its primary functions; and
 - (b) treat the other functions referred to in sub-section (1) as its secondary functions.

Summary of CSIRO Costing and Pricing Policy

Background

CSIRO's Costing and Pricing Policy is directly linked to the CSIRO Competitive Neutrality (CN) Policy, which is based on the Government's decision on the application of CN to CSIRO in September 1997 and a framework approved by the Minister in May 1998.

In negotiations, the Government recognised CSIRO's public good role and it was agreed that there are actual and potential private sector competitors for some of the Organisation's technical and consulting services.

In September 1997, the then Minister for Industry, Science and Tourism advised that:

- a. *CSIRO is required to include commercial pre-tax rate of return (RoR) and taxation equivalent regime (TER) components in the charges for consulting and technical service activities undertaken by the Organisation.*
- b. *CSIRO is required to use full cost pricing in the costing of research project bids, unless there are national interest considerations, and include allowances for tax and return targets if these are known to be incurred by competing bidders.*

Policy

All of CSIRO's commercial activities are subject to CN principles and the CN complaints mechanism. CN measures apply to competition with current and potential Australian-based private and public sector competitors.

It is CSIRO policy that:

1. All projects / activities should be costed to identify their full costs (including Divisional and corporate overheads) to the Organisation.
2. The pricing of commercial activities must be based on the perceived value to the client and an estimate of their full costs.
3. **For technical and consulting service**, the price must cover the estimated full costs and include commercial pre-tax rate of return and tax equivalent regime components (*a competitive neutrality on-cost factor*).
4. **For research projects**, the price must cover the estimated full costs, unless there are national interest considerations, and include commercial pre-tax rate of return and tax equivalent regime components (*a competitive neutrality on-cost factor*) if tax and rate of return requirements are known to be incurred by competing bidders.
5. All pricing decisions, including the estimate of costs, must be fully documented and retained for audit purposes as part of the risk assessment in the contract approval process.

To ensure the transparency of funding arrangements for commercial activities managers must:

- Structure commercial activities on a project / activity basis to facilitate accounting separation; and
- Attribute all costs (including Divisional overheads) on a project / activity basis.

The Government has agreed that CN does not apply to services provided by the National Research Facilities administered by CSIRO, as there is no actual or potential competitor. The Facilities are the Australia Telescope, Australian Animal Health Laboratory, Oceanographic Research Vessel *Franklin* and the National Measurement Laboratory.

Determining Value

The value of a project to a customer or ultimately to the nation should always exceed the full cost. The value determines the price the customer is willing to pay.

Factors that should be considered when estimating the value of a service to a customer, when deciding an appropriate asking price, include the following:

- the value of the new business opportunity, the reduced costs or the improvement to a business expressed in Net Present Value terms or similar;
- degree of exclusivity for the customer in achieving the benefits;
- ownership of, and rights to use, intellectual property;
- CSIRO reputation; and
- synergy between the customer's and CSIRO's research objectives.

Definitions

CSIRO defines:

- **Research** as the creation of new knowledge, and the application of knowledge gained from research directed to new or improved practices, products or processes, with direct and spillover benefits.
- **Consulting** as the use of existing knowledge to provide scientific or technical advice to clients on a full cost recovery basis. Projects are generally short-term and have no relevant spillover benefits.
- **Technical Services** as routine testing, calibration and analytical services.
- **National interest considerations** (to be considered when pricing research projects only) include:
 - economic, social and environmental benefits to Australia and its governments, industry and community;
 - the enhancement of CSIRO's intellectual capital; and
 - purposes determined by the Minister.
- **Full Costs** as the total direct and indirect costs (including Divisional and corporate overheads) incurred by a project / activity.

Direct Costs include:

- direct wages and salary expenses
- superannuation
- productivity superannuation
- workers compensation
- annual leave
- long service leave
- direct materials and travel
- direct overheads

Indirect costs include:

Divisional overheads:

- administration
- occupancy
- general equipment depreciation
- utilities
- research support costs
- other services

Corporate or Head Office costs