

National Innovation System Review 2008

– Submission –

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Organisation: Antarctic Climate & Ecosystems CRC (ACE CRC)

Organisation Type & Role: Unincorporated Joint Venture R&D Provider

Statement of Interest

The ACE CRC is a 3rd generation, Round 8 Cooperative Research Centre funded from July 1, 2003 to June 30, 2010. The centre does research focussed on Australia's interests in Antarctica & the Southern Ocean, the roles of Antarctica & the Southern Ocean in climate change, and climate change impacts on Southern Ocean ecosystems.

Summary

This submission relates primarily to the review of the CRC Programme included with the broader review of the National Innovation System (NIS). Six main arguments are put below, specifically that:

- The CRC Programme be retained as a central element of Australia's National Innovation System;
- The CRC funding and associated selection criteria be returned to the original principles of the programme to promote CRCs delivering social, environmental and economic benefit, consistent with the recommendation of the Productivity Commission in 2007;
- A programme of National Priority Research Institutes be established to provide ongoing support for CRCs that have proved their merit through multiple terms of funding and are addressing recognised nationally or internationally important research priorities, but are unlikely to find viable private sector or independent funding sufficient to continue;
- The broad principles of CRC governance, requiring formal oversight by a properly constituted board, be retained but with less emphasis on incorporation than has been evident in recent funding rounds;
- CRC funding to Universities qualify for the same level of funding from Government as ARC funding and incentives be considered to encourage other public research providers to contribute more to CRCs;
- The rules for (non)co-funding of research by CRCs and the ARC be reviewed to allow for greater synergy between ARC and CRC research;
- The quantum of funding available for CRCs be increased in line with increased costs of research and the duration of funding for CRCs be more flexible.

CRC Programme Future

The CRC Programme represented, at its announcement, an innovative approach to Research and Development (R&D) funding that was designed to precipitate closer working R&D relationships among universities, other research providers, government agencies and industry to address specific issues where applied research was considered necessary. The three positive reviews of the Programme, positive economic analyses of the benefits derived from CRC research, recognition nationally and internationally as a leader in driving research-end user collaborations and the reflection of the CRC principles in other initiatives (e.g., ARC Linkage Grants Scheme, CSIRO National Research Flagships, CSIRO Collaboration Fund) are all indicators of success. The CRC Programme has filled an important niche in the R&D

landscape that, with hindsight, was not being provided by any existing R&D support scheme and, in foresight, is unlikely to be adequately replaced by any of the other current schemes. We urge the NIS Review Panel, therefore, to recommend continuation of the CRC Programme, with appropriate attention to refinement and improvement to deliver even greater national benefits in the future.

CRC Selection Criteria

CRC funding in rounds 9 and 10 effectively has become increasingly focussed on a narrow mandate to do research that will promote economic growth, implicitly in a narrow 'market place' sense. In 2005, the then Minister for Science stated at the annual CRC Association (CRCA) conference that the CRC Programme should no longer be seen as a research support programme but as an industry support programme, emphasising the focus of funding on research activities that would produce primary economic outcomes. A cogent critique of such a narrow view was articulated in 2006 at the succeeding CRCA conference by retired Tasmanian Governor Professor Sir Guy Green, when he pointed out that "*Contributing to the economy and serving the general public interest are not mutually exclusive activities.*"¹ The latter view reflected what appeared to be an original underpinning of the CRC programme, with its emphasis on delivering social, environmental and economic benefits from research across a broadly defined scope of 'benefit'. This position was reiterated by the Productivity Commission in 2007.

Whilst there is clearly a place for publicly funded support of commercially focussed R&D, the flow and nature of benefit from such R&D suggests that such support should be tempered against the level of private sector investment from the primary beneficiaries. The recent trend in focus of CRC funding appears to have over-emphasised that support, despite continued poor private sector R&D investment in Australia. This trend has been to the detriment of important research in the public interest, where publically funded support is central and, appropriately, should dominate investment. This imbalance is clearly recognised by the Productivity Commission report in 2007. We endorse that view and urge the NIS Review Panel to recommend revision of the CRC Programme selection and funding criteria to recognise the important breadth of benefits from such research to the social, environment and economic sectors of the Australian community.

A Future for Successful CRCs

The CRC Programme was intended to provide a catalyst for improved collaboration among the University, government, and industry sectors of the Australian R&D landscape in the interests of focussing research on specific issues where robust and rigorous applied research would 'make a difference'. The programme has achieved considerable success in this ambition, and has been recognised nationally and internationally for doing so. The programme also was conceived as a 'seed funding' programme, with the expectation that consortia stimulated by the catalyst of CRC funding would later be sustained by participant only support. Successes of this type are fewer and many productive consortia stimulated by CRC funding have failed to survive the withdrawal of significant public funds. Perhaps most notable in these failures have been CRCs delivering recognised social, environmental and economic benefits to the public sector or diffuse constituencies not easily identified as single corporate entities.

Arguably, the legitimate representatives of the Australian community in R&D are the Australian Federal and State Governments. The same governments, therefore, are also the

¹ Green, G. *CRCs: Making an Impact: An End- users Perspective - The Environment Sector*. Address to the CRC Association Conference, Brisbane, 18 May 2006.

most appropriate benefactors and beneficiaries of R&D in the public interest. Expectations that private sector philanthropy will underwrite public benefit R&D in Australia have continually proven naive, leaving a significant flaw in the prospects for successful public benefit CRCs to continue their proven capacity to deliver national benefits based on participant or constituent support alone.

We urge the NIS Review Panel to consider recommending a dedicated funding strategy for National Priority Research Institutes under a revised NIS that would provide support for CRC-like consortia with proven track records and the capacity to continue R&D with public sector benefits in areas of high priority. We envisage funding to be competitive, focussed on addressing high priority issues in the national interest, sharing the governance principles of the CRC Programme and of a magnitude (\$10M-\$100M) and duration (~10⁺ years) sufficient to tackle significant issues that cannot be readily addressed by shorter term, single institution research.

CRC Governance

The CRC Programme has made significant progress in stimulating research-industry-government R&D partnerships largely because of the funding provided as incentive for such partnerships. An important adjunct to the funding, however, has been the requirement for formal, Board-based governance of the ventures, with specific requirements for the balance of directors reflecting research-provider (financial recipient) and research user (putative research output beneficiary) interests. Such formal governance structures are an important step beyond rudimentary research collaborations and the reference to principles, practice and legality of corporate governance, even for unincorporated partnerships, applies an important component of rigour to the governance of the consortia. A corollary of seeking governance rigour, however, has been increasingly strident pressure for all CRCs to incorporate, often at considerable added cost and with significant institutional obstacles for participants. It is not clear that incorporation is always appropriate for a CRC and nor is it *de facto* a necessary step in achieving governance rigour. We urge the NIS Review Panel to retain the principles of independent or appropriately balanced formal governance requirements for CRCs and like entities but accept that governance rigour can be achieved through unincorporated partnerships as well as through incorporation.

CRC Institutional Leverage

CRCs are built on a principle of co-funding between participants and the Commonwealth. The bulk of participant funding typically is in-kind, whereas maximum flexibility and capacity to do new, innovative research is perhaps best underpinned with significant, untied cash investment. The investment of cash from most CRC participants is based on an expectation that they will receive a good (cash) return on their investment over the life of a CRC, though no such return can be formally committed by the CRC. Uncertainty around the return on investment is an effective disincentive for many institutional participants to commit cash to CRCs. Most notable in this regard is the CSIRO, with a policy of not committing cash to CRCs and insisting on significant co-funding of contributions of existing staff. The University sector is to some extent buffered against the risk of CRC investments because of the 'research quantum' rewards earned from the tertiary education funding base for research funded by successful CRCs. Nevertheless, this indirect return on investment is not as lucrative as for research funding obtained from the ARC.

We suggest that the acknowledged benefits of collaborations to form CRCs would be enhanced considerably if the participants were offered incentives for participation that matched or exceeded those offered to the university sector for seeking ARC funding. Such incentives might be realised by: a) rewarding CRC research by university researchers with

block funding at the same rates as applied to ARC grants; b) providing a similar ‘reward scheme’ for non-university research providers (e.g., the CSIRO, GA, AIMS, AAD) as an incentive for cash investment in CRCs; c) penalising cost-recovery policies for existing staff; and d) enhancing the opportunities for R&D tax concessions for contributions by industry participants in CRCs.

CRCs & the ARC

Participation by university staff in CRCs is often complicated by conspicuous sensitivity in the ARC to the prospect of ‘double dipping’ from both CRC and ARC funds. Whilst there is a clear need to avoid duplicate funding of research, there is also clear disadvantage to imposing obstacles to linking complementary research funded from different sources. Moreover, many large research projects cannot be funded unilaterally by a single funding stream and co-funding from multiple sources is pre-requisite to success – and delivery of attendant benefits. In many such projects, there is a continuum of research streams ranging from discovery research across strategic basic research to tactical research, but there is rarely a matching continuum in funding policy within a single research funding stream. Co-funding of different facets of such research from different sources would considerably enhance the prospect of translating discovery into innovation. Such complementary funding is at best difficult and at worst impossible between the ARC and CRCs, however, to the detriment of Australia’s net R&D productivity.

Further, the disproportionately favourable reward to universities for their staff attaining ARC funding compared with other CCGs provides a disincentive to CRC participation. In the most extreme cases, university staff who are wholly or largely contributed (in-kind) to a CRC lose the right to apply for ARC funding for the duration of their involvement in the CRC, potentially incurring significant downside risk for their later career because they are unable to demonstrate successful ARC grant winning performance.

We urge the NIS Review Panel to consider mechanisms for diminishing the ‘silo’ separation between CRCs and ARC funding and promoting productive co-funding or complementary funding of relevant projects.

CRC Funding - Magnitude & Duration

The funding for CRCs has been fairly generous for many years, but the absence of indexation since Round 8 of the programme and a declining gross funding pool have signalled a decline in the adequacy of funding in real terms. The cost of doing the research that CRCs have traditionally done has increased considerably since 1991, but the size of CRC grants has not increased significantly over the same period (despite the award of a small number of larger grants in Round 10). If the CRC Programme is to continue, and deliver equal or better outcomes to those realised to date, the funds available overall and the allocations to individual CRCs will need to increase considerably from the metrics for recent funding rounds.

It is also apparent that the uniform 7-year life cycle of CRCs is not always appropriate, with some activities clearly requiring longer than 7 years to complete and others being achievable in less than 7 years. The CRC Association will propose a more flexible regime for funding CRCs that may provide a useful framework for providing longer-term funding (up to 15 years) subject to satisfactory performance whilst also providing mechanisms to wind-up CRCs at five year intervals where it is appropriate. We endorse the CRCA’s proposition, provided the suggested option for successive 5-year periods of funding by productive CRCs is implemented as a relatively straightforward step from successful 5-yearly reviews and does not require the equivalent of the lengthy application process now in place for original or renewal CRC bids.