



Creating a competitive Honeybee and Pollination CRC Bid

The Rural Industries Research and Development Corporation (RIRDC) has commissioned a project to develop a bid for a Cooperative Research Centre (CRC) for the honeybee / pollination sector.

The project, managed by Pestat Pty Ltd, will be conducted in two phases. Phase 1, to run until September 2010, will assess the level of potential participant interest in a CRC. Providing there is sufficient commitment and a competitive response to the CRC selection criteria can be outlined, Phase 2 will commence, to develop a bid for submission in July 2011.

Pestat will carry out extensive consultation, including with appropriate industry, research, government and education bodies. However, Pestat also welcomes comment and advice from individuals and companies; any interested body or person is welcome to contact us, or respond to the brief questionnaire at the end of this paper.

This discussion paper briefly outlines the CRC Program, the organisation of CRCs and the competitive selection process for a CRC. It also considers relevant aspects of the honeybee and pollination industries and identifies key issues which need to be addressed in Phase 1 of the project.

1. Background to Cooperative Research Centers (CRCs)

The CRC Program commenced in 1991 and is managed by the Commonwealth Department of Innovation, Industry, Science and Research. Some important features are:

- It provides funding to build **critical mass** in research ventures between end-users and researchers which tackle **clearly-articulated, major challenges for the end-users**. CRCs pursue solutions to these challenges that are innovative, of high impact and capable of being effectively deployed by the end-users. 'End-users' can be either public or private entities who can use the research "to deliver significant economic, environmental and/or social benefits to Australia".
- it links researchers with industry to focus R&D efforts on progress towards *utilisation* and *commercialisation*. The close interaction between researchers and the users of research is a key feature of the Program.
- Another feature is industry contribution to CRC education programs to produce industry-ready graduates.
- A CRC is well-funded, for up to 10 years, by a combination of CRC Program grant, participant's cash and participants in-kind.

2. Structure of a CRC

A CRC is typically headed by a full-time CEO with a governance model which includes a skills-based Board headed by a Chair who is independent of the participants, and with a majority of the Board members who are independent of the CRC's research participants. The CRC becomes an entity in its own right with a full corporate structure that must be run in accordance with the good governance principles applied to corporations. CRCs often include a Participant Advisory committee.

CRCs have a limited number (commonly 3-5) of coherent Research Programs, each led by a Program Head. Programs may contain any number of individual Research Projects. There is always an Education Program, which must include (but is not limited to) PhD training, and in addition there are often communication/ outreach and commercialisation programs.



CRCs commonly have a headquarters (and staff) sited in a major city and a number of research 'nodes' located with the partners. The Program is actively national and CRCs are encouraged to have operations in several States and Territories.

The Commonwealth grants have ranged in size from \$6m to over \$32m, the average being \$18m. Partners **must** contribute at least as much as the Commonwealth grant and commonly pledge substantially more. A common model is around 1/3 cash from the Commonwealth grant, 1/3 cash from the participants and 1/3 in-kind from the participants. Although there is no formal weighting against the value of the in-kind contribution, it is often said that 'cash is king' in the competition.

As well as a strong and well articulated research plan, a successful bid CRC will have to clearly demonstrate an achievable path to adoption for the CRC's research outputs (though full utilisation may not occur until after the CRC has ceased operation). Adoption/ utilisation is where the CRC will usually draw upon its industry and other end-user participants. CRCs use various strategies to protect and manage the use of new technologies and other innovations they generate.

Four basic options are generally used by CRCs as management strategies for intellectual property (IP):

- licensing of intellectual property for commercialisation,
- licensing of intellectual property for utilisation,
- starting a new company for commercialisation of all or particular intellectual property,
- assignment of intellectual property.

For details of the Program, structures and selection process, see:

CRC Website: <https://www.crc.gov.au/Information/default.aspx>

Further useful information is available from the CRC Association – see www.crca.asn.au/

3. Participants in a CRC

A CRC must include at least one university and at least one end-user participant, though it is usual to have multiples of each. Participants can include companies based in Australia or other countries, small and medium enterprises, research and development corporations, government agencies and other users of research such as industry associations. Research providers can include universities, the CSIRO (Commonwealth Scientific and Industrial Research Organisation), other government laboratories research institutes, and companies.

A participant is described as "A person, body or organisation who has agreed to support the CRC's activities and provide contributions to the CRC".

There are commonly two levels of participation:

- **core members**, who make a significant contribution to the CRC and its operations and
- **associate members**, who make a more limited contribution.



➤ The advantages of CRCs for end-users

CRCs are unlike other research centres or schemes and occupy a particular place in the Australian R&D landscape. The retention of the scheme since 1990 speaks to its success. Periodic reviews have refined the scheme, but its foundation – longer-term, collaborative, R&D - remains unchanged. CRCs:

- have become dynamic, innovative, unifying icons for some industry sectors;
- have attracted major investment (total resources over the life of some CRCs approach \$100m) and delivered substantial returns on public and private investment;
- can support longer-term R&D horizons than normal;
- can provide a critical mass and unite previously fragmented research efforts, improving both quality and efficiency;
- can create enduring cross-industry linkages;
- facilitate close collaboration between researchers and partners (“end-users”), by focusing on research outputs are of practical use to end-users;
- create a partner-driven, project-managed, research agenda; and
- have industry / end-user focussed education programs.

4. The CRC Competition

Selection rounds for new CRCs are held annually. The process and selection criteria may be amended periodically, but it is expected that the priorities published for the 2010 competition (Round 13) will apply to the 14th round in 2011. Applications are expected to close in July 2011.

While applications from all sectors of science and technology are invited, the government may identify particular research priorities; in 2010 it has identified manufacturing and social innovation as priority areas.

There are three selection criteria:

1. The proposal will undertake excellent-quality research that addresses issues of economic, environmental and/or social significance to Australia
2. The outputs from the proposed research, when implemented, will deliver high levels of economic, environmental and/or social benefits to Australia.
3. The proposed collaboration will marshal the appropriate participants and other resources necessary to achieve the proposed outputs.

An application must score highly on each criterion to be competitive as the contest for a CRC is intense.

There is a formal application procedure, commencing with stage 1, after which the CRC Committee shortlists a limited number of applications for interview. Successful applicants are normally advised in December and have until the end of June of the following year to complete all legal requirements; the Commonwealth grant normally commences in July. The first year of a CRC is generally an establishment period, during which projects are initiated, staff recruited, etc. A new CRC is usually fully-operational in its second year.



In the 2009 round there were 18 formal applications. Twelve progressed to interview and seven were awarded grants.

The 2009 round of CRCs saw the successful bids receive grants between \$21 million and \$38 million, over 7 years. In previous competition rounds, smaller grants have been awarded.

The funding period for a CRC is up to 10 years (further extensions are available for up to 5 years) although 7 years is the most common funding term.

CRC grant funds can be used for:

- Salaries for researchers and support staff, fellowships and student stipends
- Direct support costs of research
- Indirect support costs of research (in Australia)
- Capital items (not buildings).

➤ Legal arrangements and Intellectual Property

All participants in a CRC sign a 'participants agreement' and core members also sign the 'Commonwealth agreement', which is the funding agreement. These agreements set-out in detail the obligations of the parties, their formal relationships, the agreed activities of the CRC.

Agreement in principal to arrangements for intellectual property ownership and assignment is an important precursor to drafting formal agreements.

➤ Successful bidding

Keys to a competitive bid are:

- a compelling, well enunciated need,
- a first-class research agenda,
- clear paths to implementation of research output,
- an effective, innovative education program,
- a strong management team,
- a high level of participant commitment and investment – cash commitment is very important, and
- demonstration of the added value of the CRC – the sum amounts to more than the parts.

The first phase of this project is thus to establish whether a partnership can be established which will allow a competitive bid to be mounted.

In this phase, we seek to make sure the CRC Program suits the strategic needs of a participant consortium and that other development mechanisms are not more appropriate. Alternatives include individual agencies and companies entering into a less formal strategic relationship, or accessing programs such as the Australian Research Council's National Competitive Grants Program.

The bid will need to establish that there can be a shared 'vision' among participants including identifying the research field, how to utilise and/or commercialise research outputs (path to adoption), value of research outputs, commercial terms, return from expected outcomes and value for investors. We need to be able to translate the vision clearly into the application so it will continue to both 'ground truth' and inspire the team during preparation of a competitive application. From experience, the integration of all parties into the consortium and enunciating a shared vision are critical.



The bid will also need to have a key person or group who will 'drive' the bid, 'sell' the vision, help 'gel' a team from differing cultures of industry and research, and generally advocate for the consortium. The bid team could consider developing networks, including CEOs or Business Managers of CRCs, to use as a sounding board – the CRC Association CEO is a very useful contact. The CRC Association annual conference is another avenue for networking and keeping abreast with current developments.

➤ **Deciding whether to bid for a CRC**

Phase 1 of this project, the scoping study, will use three indicators to answer the critical questions, one indicator addressing each of the selection criteria.

Indicator #1 **The Science** – can (a) an innovative research program, with three research themes, be identified and underpinned by the intellectual and material resources to pursue them? And (b) can an equally innovative and industry-focussed education and training program be developed?

Indicator #2 **The Business** – requires that a Business Plan can be developed which will implement the R&D outputs, delivering benefit to stakeholders well in excess of the value of inputs. Is there a clear 'path to adoption' providing a continuum from the lab bench to commercial/social benefit?

Indicator #3 **The Right Participants** - requires that a comprehensive consortium of investors (providing a balance of significant cash and in-kind inputs) can be established which can create and adopt innovation. International linkages are encouraged by the CRC Program, so we need to explore whether there are overseas labs, companies or services we should engage. Is there (a) a common vision, (b) adequate investment pledged and (c) clear leadership identified to carry the consortium through the bidding process and into a CRC?

A competitive bid will need to score highly on each indicator.

It is worth emphasising that a well-developed bid will seek to identify and minimise risks, however even for a competitive and well-funded bid, its fate still depends to an extent on the number and quality of other applications. There are always more plausible and well-argued cases than there is funding available.

5. **Honeybee and pollination industries – possible Research Agenda and Business Plan**

The honeybee and pollination sector has recently been the subject of a Commonwealth Parliamentary enquiry. The report *'More Than Honey: the future of the Australian honey bee and pollination industries'* was released in May 2008. The enquiry received extensive input from industry and a broad group of stakeholders.

The report noted that the Australian honeybee industry is a comparatively small, but vital, component of the Australian economy. While the directly derived products are valued at some \$80m p.a. the pollination services provided by European honey bees contribute \$4-\$6 bn to agricultural production, as some 36 crop species are completely or partially dependent on bees for pollination.

A number of the key issues addressed in the Parliamentary report could form the focus of a CRC's R&D program.



It is suggested that, for the purposes of discussion, the following R&D topics be considered:

- Bee breeding – (a) protecting pollination by increasing bee resistance to disease, (b) improving honey productivity and (c) increasing pollination efficiency;
- Enhancing return on pollination services – crop yield improvement through harnessing the relationship between crops and managed pollination services. Specifically, to quantify, test, refine and improve the value and application of honeybees for pollination services.
- Diagnostics – development of diagnostic tools for rapid and reliable testing for disease and quality attributes.
- Value-adding – specialist higher-value uses of honey for dietary, therapeutic and other uses;
- Effective policies and strategies – including harmonisation of practice and standards, operational procedures etc. and improving natural resource access and security.
- Other, more refined and specific topics, identified by participants as important to their specific conditions.

It is prudent to consider the breadth of the research agenda. It should be as wide as necessary to satisfy the needs of key investors but not so broad that it dilutes a cohesive mission, or stretches beyond the bounds of ‘world-class research and innovation’. In that context and despite the widespread concern over *Varroa* it is suggested that a bid does not trespass on the established pre- and post-border quarantine procedures.

Ideas on the research agenda can be explored in the attached questionnaire (see end of discussion paper).

6. Timetable for consultation

The timetable for this project is as follows:

Activity	Target date
Confirm scope of study with RIRDC	1 st week June
Contact key industry and research stakeholders with an introductory e-mail outlining the project and broad time-lines. Publish discussion paper - Circulate e-newsletter.	2 nd week June
Begin first round of face-to-face meetings with interested parties and potential stakeholders	2 nd week June
Complete first round of face-to-face meetings	4 th week July
Project team review and summarise findings to date. Circulate 2 nd e-mail newsletter. Identify pivotal stakeholders for further discussions	1 st week Aug
Begin 2 nd round of face-to-face meetings	2 nd week Aug
Complete 2 nd round of face-to-face meetings	4 th week Aug
Project team review findings Final date for receipt of responses to questionnaire.	31 Aug
Draft scoping study/report circulated to key stakeholders for comment	7 Sept



Comments on draft scoping study/report received and final edits started	15 Sept
Submit Phase 1 scoping study/report to RIRDC	30 Sept
If it is agreed to proceed with bid, advise stakeholders and broader interested community.	1 st week November
Circulate detailed Phase 2 timetable and revised draft science and business plans to all interested parties. Establish a bid consultation group.	1 st week December
Hold meeting of bid consultation group.	Early 2011
Hold workshop of all prospective partners to confirm research program, commercialisation / technology transfer program, education and communications programs.	February 2011
Confirm inputs from partners	March 2011
Draft contracts and bid application	April 2011
Circulate application for sign-off by partners	May 2011
Finalise details of bid	June 2011
Submit bid	July 2011

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The Pestat team:

Mr Chris Buller (BSc, BA) is a research project management practitioner who has been associated with the CRC Program since its inception in 1990. He has held business management positions with three CRCs, managed the successful bid to establish the Invasive Animals CRC (IA CRC) and served as its Deputy CEO. He also held the position of Company Secretary for the IA CRC's associated incorporated entity. He has also contributed to multi-agency teams establishing two national research facilities (the Australian Plant Phenomics Facility and the Australia and New Zealand Collaborating Centre for Animal Welfare Science and Bioethical Analysis), and has recently provided services as a consultant/ advisor to two other CRC bid consortia.

Prof. Joan Dawes will also provide key input to the project. Prof. Dawes has extensive experience in delivery and commercialisation of scientific research in health and the life sciences, having served as CEO of the CRC for Biopharmaceutical Research, CEO of the ASX-listed company BioDiscovery Ltd, President of the Australian Biotechnology Association (now AusBiotech), and Senior Consultant for the AorisNova and Innovation Dynamics consulting groups. Prof Dawes is a past member of the Governing Boards of the Pest Animal Control CRC and the Invasive Animals CRC. She is a current member of the Commonwealth's CRC Program Interview Panel.

Dr David Dall will assist with management of the project. Dr Dall has a broadly-based background in scientific research, R&D management, and commercialisation of R&D outputs. His experience includes appointments as a Principal Research Scientist with CSIRO Entomology, and as a Senior Research Manager with the Rural Industries Research & Development Corporation (RIRDC), where his responsibilities included management of the Honeybee and Pollination R&D Programs. Dr Dall is the Managing Director of Pestat Pty Ltd.



Questionnaire

This quite generic questionnaire is an important first step in recording interest. If there is inadequate space, please add separate sheets. If you have comments which do not fit the format, don't worry, please send them – we want to get all comments and views at this early stage.

- Please make initial comments by 1st August 2010.

Your details	1. Your name	
	2. Your organisation's name and address (if appropriate)	
	3. Your preferred contact phone number	
	4. Your e-mail address	
	Do you represent, or are you associated with, one or more of these? Please tick / highlight	<ul style="list-style-type: none"> • Research provider • Commercial entity which could adopt and use research findings • An industry organisation • A state / commonwealth government agency • Other
Selection criteria	Questions	Your comments and thoughts
Selection criterion #1 The CRC must plan excellent-quality research that addresses issues of economic, environmental and/or social significance	What, in your view, should be the CRC's research priority areas? Please list:	1. 2.



		3.
<p>Selection criterion #2</p> <p>The outputs from the proposed research, when implemented, will deliver high levels of economic, environmental and/or social benefits to Australia.</p>	<p>What is your interest in participation in a CRC? If so, what do you see as your area of contribution? If you are an end-user, how would you adopt the research outputs and what value can you imagine them adding to your business?</p>	<p>Comments here please:</p>
<p>Selection criterion 3.</p> <p>The proposed collaboration will marshal the appropriate participants and other resources necessary to achieve the proposed outputs."</p>	<p>What could you bring to a CRC? Are you prepared to invest cash or in-kind (including your time) developing a bid and, if successful, into the CRC?</p>	<p>Comments here please:</p>

If you wish to talk to Pestat about this study, please contact Chris Buller:

e-mail chris.buller@pestat.com.au

mobile: 0407 511 896

Please return your completed questionnaire either by

e-mail Mr Chris Buller (see above), or

fax (02 6201 5821), or

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