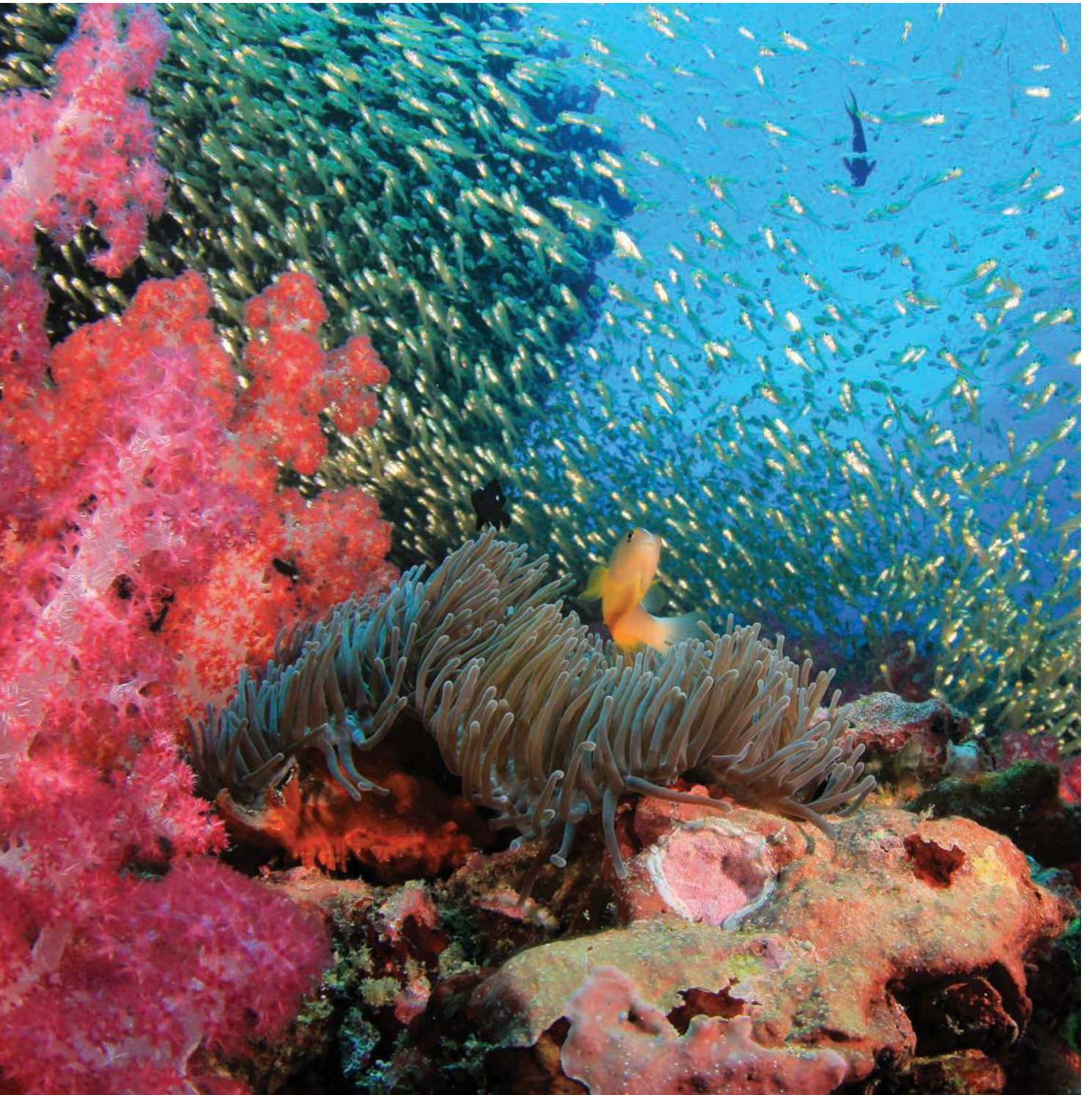


COOPERATIVE RESEARCH CENTRE FOR

AUSTRALIA'S BLUE-BIOECONOMY BB CRC PROSPECTUS







YOUR INVITATION AND GATEWAY TO THE FUTURE OF AUSTRALIA'S BLUE BIO-ECONOMY

The Blue Bio-economy is a business and societal response to environmental, resource and social challenges and opportunities through the sustainable use of marine biological resources for creating new marine-derived products, industries and jobs.

The Global Blue Bio-economy is an industry worth over US\$176b/year globally. In Australia it has an estimated value of US\$ 3b, 0.14% of the total global GDP output of US\$126.69 trillion. The Australian National Marine Science Plan 2015-2025 has a target of 8% annual growth rate in the value of our Blue Economy. Australia has the world's third largest (10,148,250 km²) Exclusive Economic Zone (EEZ) comprising some of the world's most significant regional biodiversity and pristine waters with a global reputation for being managed sustainably. This presents an unprecedented growth opportunity for Australian industries, businesses, public institutions and communities to develop a new, globally competitive Blue Bio-economy for Australia.

Secure a significant role for your organisation in the growth of the Blue Bio-economy by joining this first CRC dedicated to marine biotechnology and bioproducts industry development as part of the Australian Blue Bio-economy future.

Marine biotechnology is one of the fastest growing fields of science and technology delivering many productive new opportunities for existing industries as well as supporting the development of new industries in mariculture, food and functional food, nutraceuticals and cosmeceuticals, biomaterials and biofuels, and pharmaceuticals. Many developed and developing economies with marine territories, including the US, Europe, Japan, China and Korea have been actively developing and implementing their 'Blue Bio-economy' strategies to secure their next wave of economic growth. Australia is significantly lagging in global Blue Bio-economy development, investing in R&D innovation and translational commercialisation hold the key

for our national success and competitiveness in this exciting new opportunity arena.

The CRC for Blue Bio-economy (BB CRC) is an ideal initiative to strategically grow and position the Australian Blue Bio-economy in the global market through driving the translation and commercialisation of R&D in advanced manufacturing of marine bioproducts, to meet local and export demands of Australian products.

The BB CRC will serve as an open collaboration and partnership platform to integrate the leading capacities and expertise within and outside Australia to develop the best solutions for the Australian industry growth and success in the global Blue Bio-economy. The focus will be on the establishment of a full-value chain approach to enable sustainable marine biomass production (wild harvesting and cultivation), environmentally-friendly advanced processing, innovative products development and formulation, and intelligent global marketing by training the Australian Blue Bio-economy workforce.

VISION

To grow and position the Australian Blue Bio-economy as a global leader through capacity building and sustainable and strategic utilisation of Australia's abundant marine biodiversity.

MISSION

To support the Australian National Marine Science Plan 2015-2025 in doubling the Blue-Bioeconomy in the next 10 years by developing a national capacity in industry-led and driven research innovation, training and commercialisation.

BB CRC PROGRAM DESIGN

The proposed CRC for Blue Bio-economy (BB CRC) will have three coherent programs (commercialisation strategies will be integrated into each research program) to build a full value-chain capacity.

1

PROGRAM 1

Sustainable production of marine biomass (both macro and microalgae, marine animals) for bioproducts from Australia oceans.

2

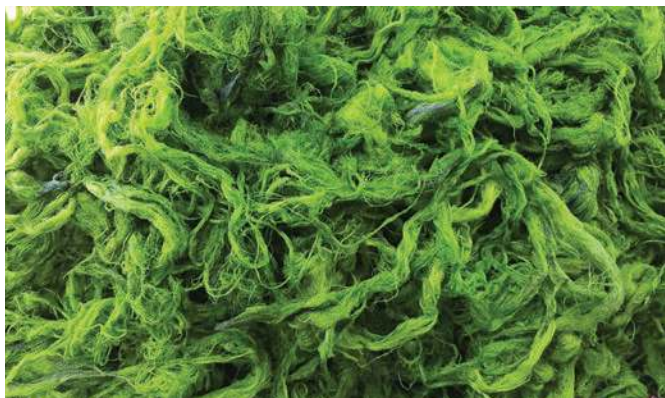
PROGRAM 2

Marine biorefinery and bioproducts development (process and product development such as peptides/ proteins, carbohydrates, pigments, omega-3 fatty acids), seafood co-products and bioproducts.

3

PROGRAM 3

Education and training for blue bio-economy industry development.

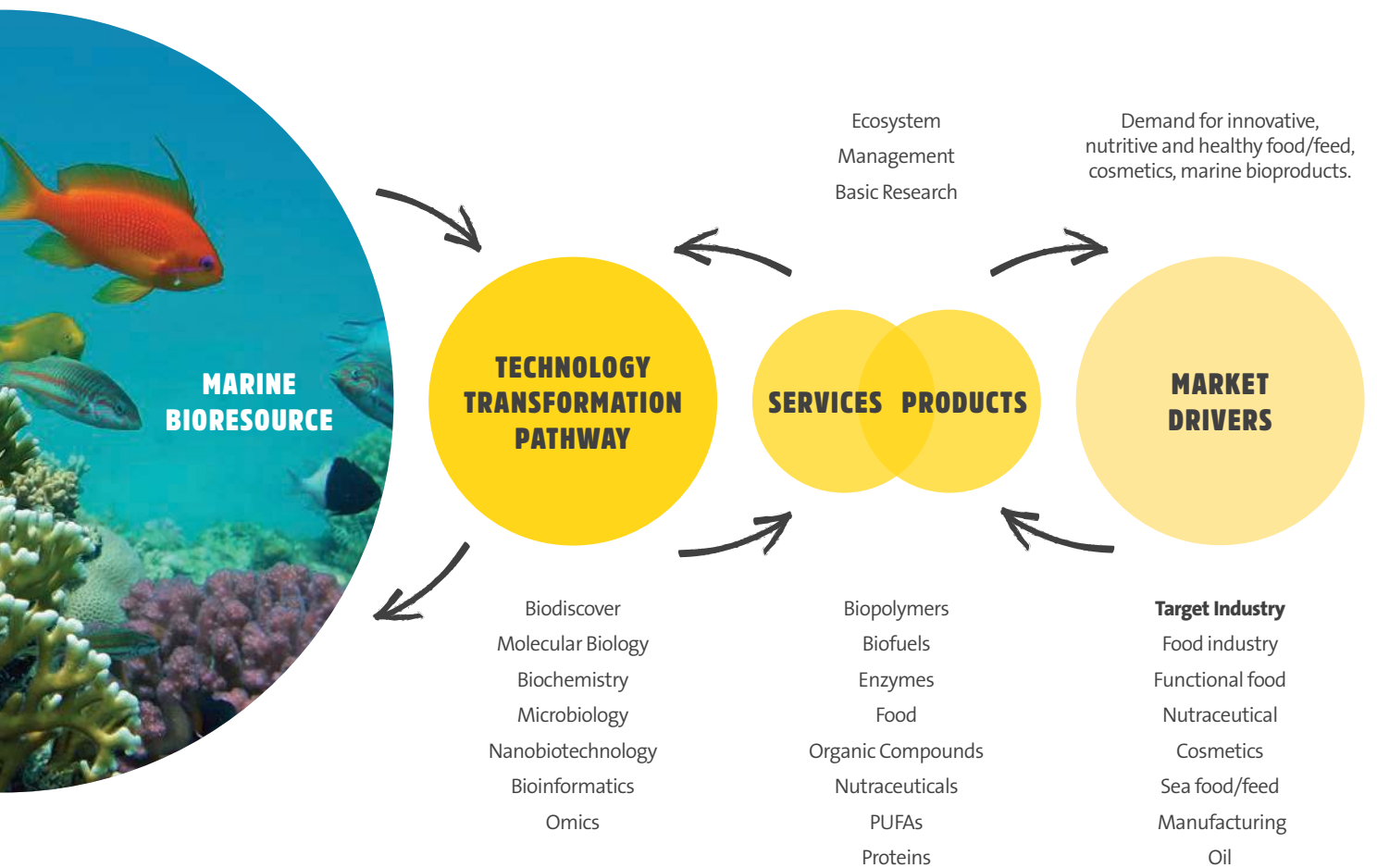


The proposed BB CRC will apply best practise in (a) research innovation and excellence, (b) management and governance, (c) industry-oriented education and training, and (d) industry impact (including building R & D capacity, new products, new industry and new jobs). The BB CRC will work with industry participants to develop improved and new processes for the production of marine-derived new functional food, nutraceuticals, medical foods, biomaterials, feed and agriculture chemicals for the development of marine biotechnology industry in Australia.

EXAMPLES OF RESEARCH PROJECTS THAT COULD BE CONSIDERED UNDER PROGRAMS 1 & 2 INCLUDE, BUT ARE NOT LIMITED TO:

- Development or adaptation of Australia's mariculture biomass production capacity for the marine biotechnology industry (existing seafood industry or new comers and investors),
- Bioprospecting for functional foods and health supplements from marine bioresources; bioprospecting for genes of interest
- Algal agrifeeds and aquafeeds with higher protein and lower fibre, to replace traditional fishmeal both for nutritional and health benefits
- Seafood waste transformation into high value products
- Vegan products and foods for special consumer groups
- New aquaculture ingredients
- Use of marine ingredients in sensor development and biological indicators





FULL VALUE-CHAIN

In recognising the need for Australia to change fundamentally in how marine resources are used for securing our beautiful environment and competitive industry, the proposed BB CRC opens the way to adopt novel approaches. We will work with industry participants and key stakeholders to deliver innovative marine products (some examples shown in the above given figure) from the lab-bench to the market driven by customers' demands as a full-value-chain solution .

PROGRAM BENEFITS

The BB CRC will provide a multidisciplinary innovation environment that will include key experts from universities and research organisations, international collaborators and the marine biotechnology industry.

A key focus of the BB CRC will be to attract high quality postdoctoral researchers, engineers and research students globally. The CRC will be actively involved in the recruitment and supervision of students through

collaboration with companies, particularly companies active in marine Biotechnology. Post-doctoral fellows and PhD students will be jointly supervised by the CRC members.

A number of the projects will be collaborative and multidisciplinary leading to the development of marine food and functional foods, cosmeceutical and nutraceutical industry, marine renewable materials, higher industry profits, income diversification, upskilling workers, regional jobs and growth, and environmental sustainability. Professional development programs will be developed for students and researchers to build their capacity to work effectively with or within industry.

WHAT IS A CRC?

The Cooperative Research Centre program was established in 1990. The program is administered by AusIndustry, a division within the federal department of Industry, Innovation and Science. The program is a competitive, merit based grant program that supports industry-led collaboration between researchers, industry, and the community. Since its inception the Australian Government has invested more than \$4.2 billion in over 100 CRC's.

ALIGNMENT WITH GOVERNMENT PRIORITIES

The proposed BB CRC is unique as it addresses the development of new and/or improved Australian marine bio-products, functional and nutritional foods, utilising and minimising waste, using clean and green, market-competitive, and quality assurance technologies. There is an increasing interest and demand for marine-based agrichemicals, beneficial bacteria, and carbon neutral feeds. It aligns with the Australian government science and research priority of "Food", and the associated Research Challenge "Enhance food production through better management and use of waste and water; increased food quality, safety, stability and shelf life".

The National Marine Science Plan (2015-2025) recommended the creation of a decadal plan to focus investment on the biggest development and sustainability challenges facing Australia's marine estate, and highest priority science is needed to tackle these challenges and fulfil our blue economy potential.

PARTICIPANTS AND BID CONTRIBUTION

PARTICIPATION FROM RESEARCH PROVIDERS

Research providers will need to identify the skills, capability and industry partners that they can bring into the CRC to deliver the vision, mission of the BB CRC and target the priority research areas identified within the programs. Every intending core-participant is expected to contribute towards the development of the bid process. Indicative bid contributions will be discussed with participants proceeding to the Stage 1 expression of interest workshop. At this stage the bid contribution is anticipated to be in the order of \$5000-\$10,000 depending on the number of the participants, the size of the organisation and the level of cash/in-kind support committed to the bid. Research providers will need to invest a minimum of \$100,000 p.a. cash plus additional in-kind to participate, however, program leaders in the CRC will need to contribute more in-kind.

PARTICIPATION FROM INDUSTRY

Industry partners will help identify target outcomes that may be better delivered by the BB CRC and what research and education activities will be undertaken by the BB CRC to deliver the greatest benefit to your business, the industry, your state and the nation. The participation of SMEs (small and medium enterprise) is strongly encouraged and SMEs can often be major beneficiaries of CRCs. Minimum cash contributions for industry participants are likely to be in the region of \$50,000 p.a. with core participants contributing a minimum of \$100,000 p.a. Industry partners are also expected to contribute in-kind support.

Large companies (core participants) will need to invest a minimum of \$100,000 p.a. cash and in-kind resource to participate, for which their indicative return on investment (ROI) will be determined prior to any binding commitment being made. Industry contributions to the organisation can be claimed against the R& D Tax incentive.

TERM

The new BB CRC program will run for a maximum of 7 years, with a minimum Education and Training output of about 25 industry ready graduates (Masters and PhD); our bid will aim for \$2 to 3 million per

annum matching Commonwealth funds as a realistic bid, equating to about 6-9 concurrent projects at any one time. Leveraging ratios for participants will not be guaranteed but are likely to be in the region of 4:1 or 5:1. Realistic commercial returns for industry investors should be a minimum of 5:1 per annum based on annual GVP.

BID LEADERSHIP

Bid leadership and governance structure to be discussed by the bid advisory group at the time of the initial bid development workshop. The CRC guidelines state that all CRCs must establish and be governed as an incorporated company; a CRC Board must include a Chairperson who is independent of the participants; the composition of CRC Board should include a senior figure with general industry experience (and industry champion) and expertise relevant to managing a CRC.

The proposed BB CRC will be a public-private venture. The participant will decide the length of funding to be requested (typically the term is 7-10 years). The proposed CRC once funded will be governed by a Chairperson (independent of participants), CEO, program leaders and research directors.

INTELLECTUAL PROPERTY

In the beginning of the CRC (post-funding scenario), there is a necessity to have commercialisation agreements with individual industry partners. IP arrangements will be negotiated on an individual project basis. Companies sponsoring a project will have first rights to commercialise IP developed in that project.

BID TIMELINE

PRELIMINARY STAGE

March - December 2017

- Engagement with potential partners (industry, research and government)
- Bid workshop, and meetings to identify key industry problems
- Finalise research program and commitment from participants

FIRST PHASE: DEVELOP EXPRESSION OF INTEREST

January - July 2018

- Commitment from all participants
- Lodge expression of interest (every participant to contribute)

SECOND PHASE: CRC-BID SUBMISSION

August - November 2018

- Hiring of a consultant to assist in the bid development process.
- Workshop to finalise the program and initial projects
- Develop business plan and value proposition
- Every participant to contribute for this phase

ANNOUNCEMENTS

First Quarter 2019

CRC COMMENCE OPERATIONS

July 2019

HOW TO BECOME INVOLVED

Contact bid developers, attend the proposed workshop, become actively involved in the bid preparation, and bring your industry partner.

Key benefits of participating in the CRC include:

- Increased R & D capability through collaboration and public investment
- Eligibility for the Australian R & D taxation regime
- Partnering with Australia's leading researchers, to deliver industry focussed outcomes

The total cost of the program will be funded by cash and in-kind contributions from participants and a cash commonwealth grant. Funding rules require at least 50% of the overall resources contributed by participating organisations, in the form of cash contributions and substantial in-kind contributions of personnel, equipment, products or services.

FOR MORE INFORMATION CONTACT

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The bid is receiving input from Flinders University, Deakin University, The University of Queensland, Government of South Australia, CSIRO, Australian Sea Food and International Industry.



Government
of South Australia





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CRICOS NO. 00114A