

Bea circular valley

Regional Circularity Co-operative

FRDC Circularity in
Aquaculture and Fisheries
program

1st August 2023



FRDC
FISHERIES RESEARCH AND
DEVELOPMENT CORPORATION

Acknowledgement of Country

The Regional Circularity Cooperative (RCC) acknowledges and pays our respects to the Traditional Custodians of the lands, waterways and airspace of Australia.

We learn from these people about the traditions of stewardship of resources and working together as a community to have a lighter impact on the environment.



Biggah a meeting place for ceremonies

Bunan rings are culturally significant ceremonial sites for Aboriginal people. There are a large number of bunan rings located throughout the Bega Valley area and the majority of these sites are on privately owned land.

Tribes within the Yuin Nation would travel and congregate in the Bega Valley for ceremonial practice. Bunan rings are evidence of these ceremonies.

It is important that we work together to protect and preserve these special sites.

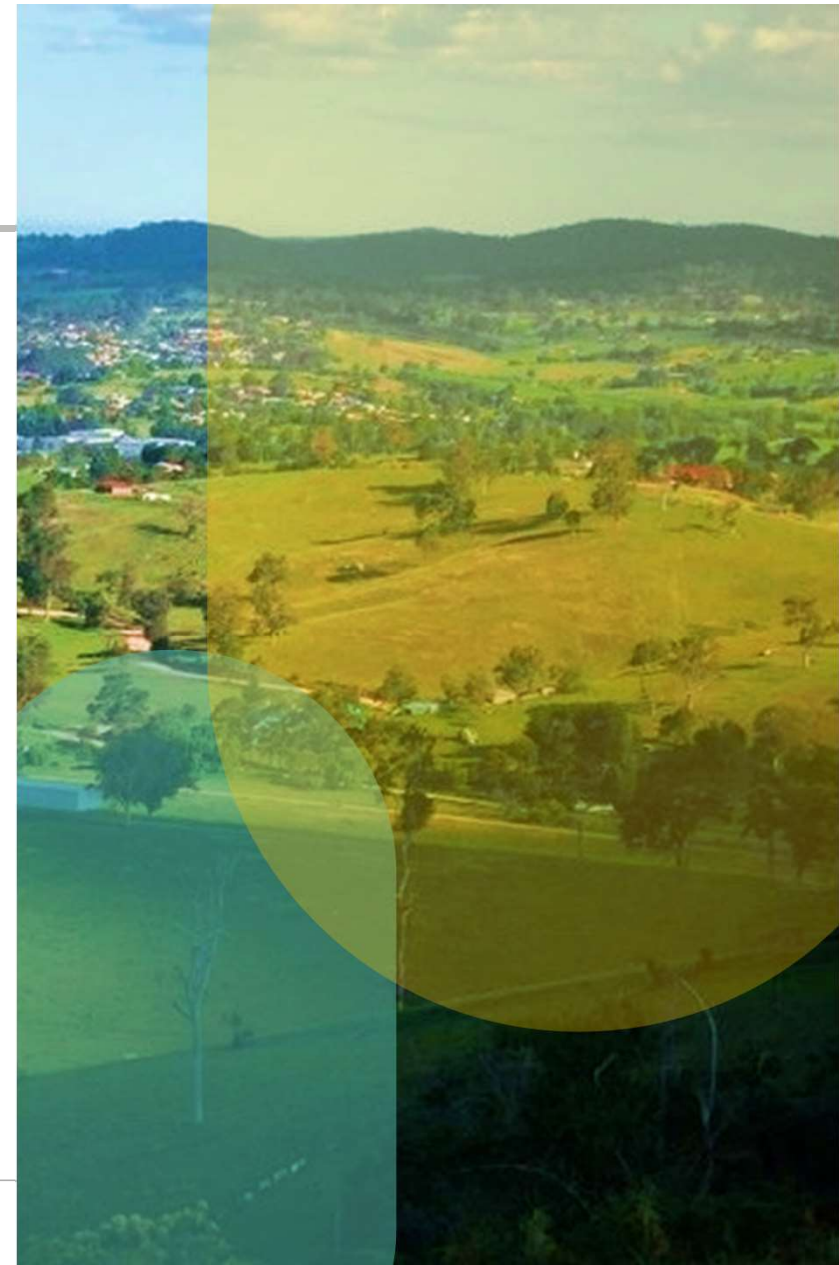
"Then something of our Aboriginal Culture will be preserved and the heritage of all Australians, white as well as Aboriginal will be richer."

GUBOO TED THOMAS, APRIL 1979

Serpent Dreaming by Djiringanj elder Aunty Colleen Dixon 2006

bega valley shire council | NSW | Local Land Services South East | NSW | Office of Environment & Heritage

*Cover image credit David Rogers Photography, courtesy of Sapphire Coast Destination Marketing.
Bega Circular Valley logo is a collaborative design by Jamara Nye and Catherine Leach
'Serpent Dreaming'; by Djiringanj elder Aunty Colleen Dixon, 2006



What is circular economy?

The Circular Economy means that products no longer have a life cycle with a beginning, middle, and end. When materials stop being used, they go back into a useful cycle – hence the term 'circular economy'.

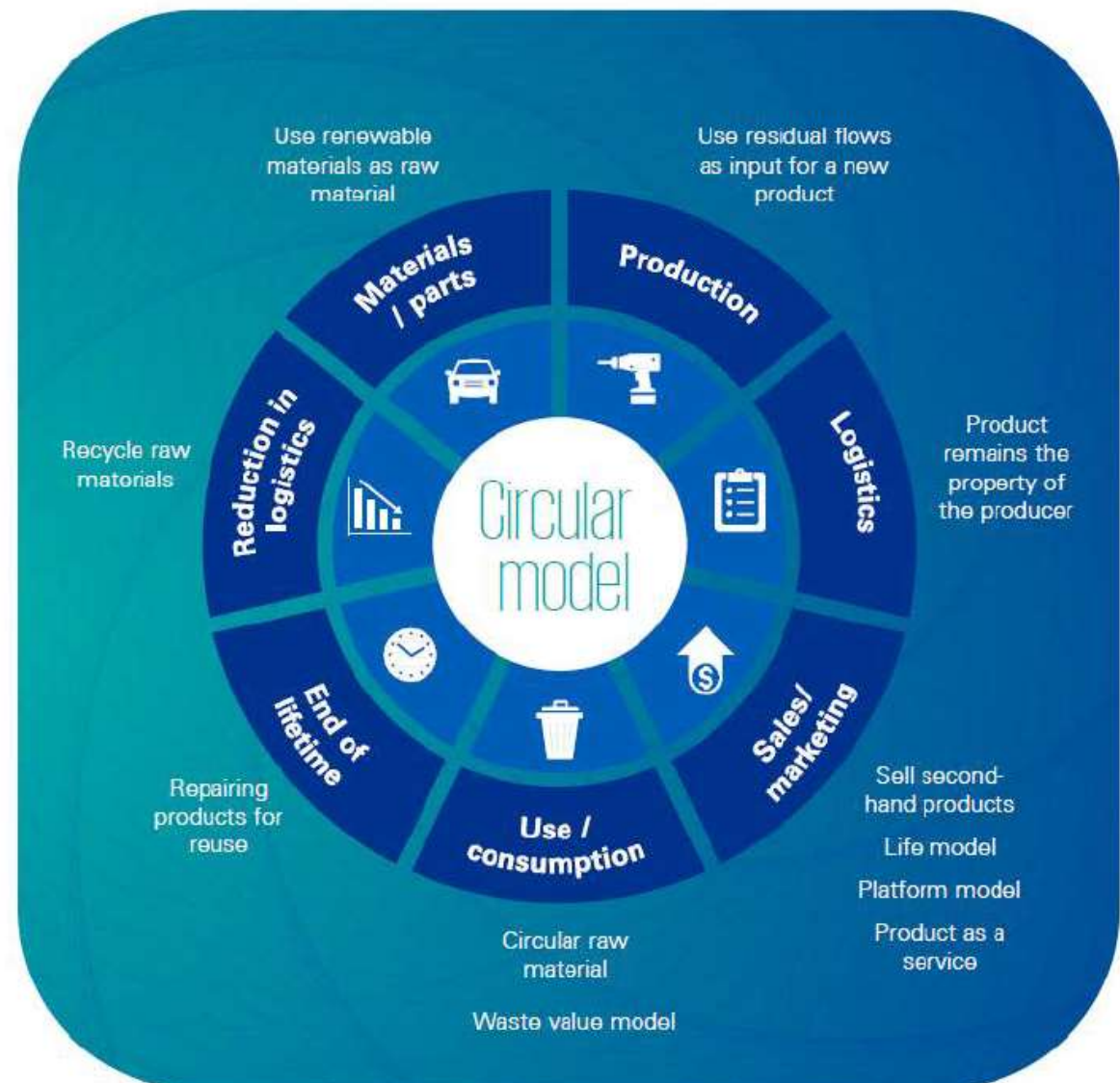
It has the potential to:

- enhance productivity and profitability;
- reduce resource costs;
- make manufacturing more competitive; and
- create new business offerings and jobs.

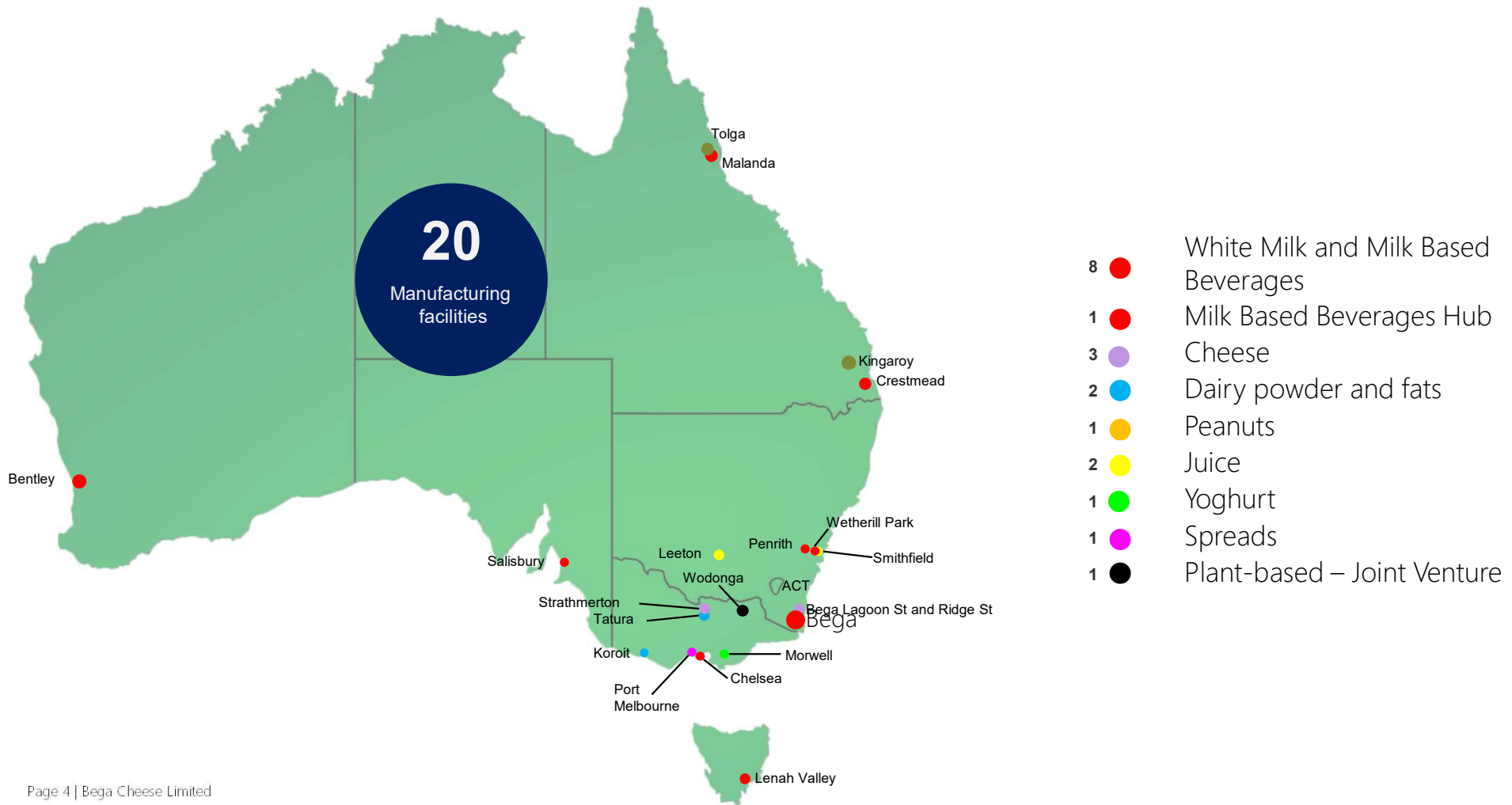
To achieve this, the circular economy is about closing the raw material cycles and therefore focuses primarily on cooperation within and between sectors.

It's about a system change. The circular economy is therefore more than 'waste 3.0'; it is about commodities valued as high as possible. There are different business models within the circular economy to increase these values.

These models have an effect on the production process of products, as shown on the right.



Manufacturing footprint



Brand portfolio



Milk Based Beverages



Jacaranda



White Milk



PURA

MASTERS
M



Dairy Choice



Yoghurt



früche



Bornhoffen



Juice and Drinks



Primo



KYNETON SPRINGS



Dairy Foods



Royal Victoria



Spreads and condiments



Water Ice



Culinary

PURA



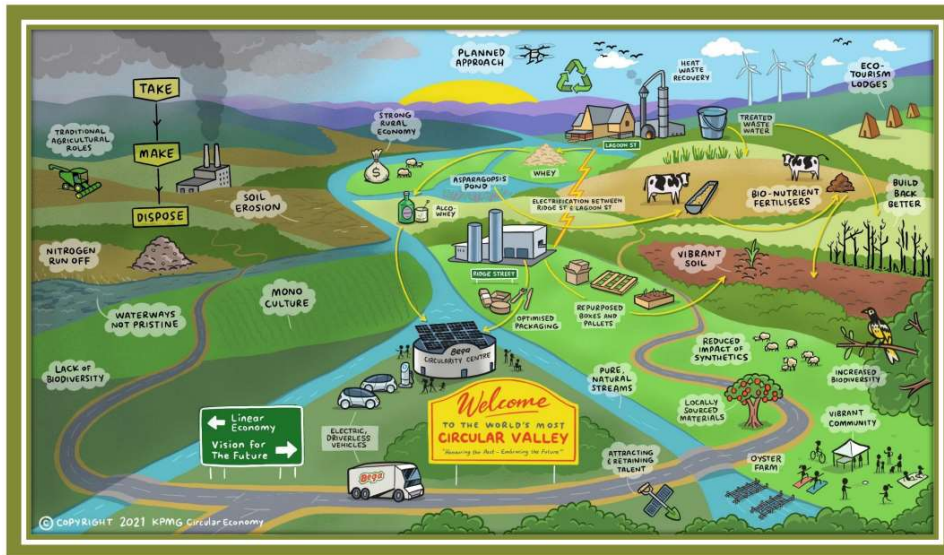
Nutritionals

HAPPi

180 NUTRITION

RCC's key milestones and vision for the Bega Circular Valley

VISION



"Our goal is to create a legacy for the future generations of the Bega Valley, and be an example for other regions to follow as the most circular Valley in Australia"

Barry Irvin
– Regional Circularity Co-Operative Chairman











Current RCC focal projects (Appendix 2)

KEY MILESTONES



Metrics of focus for the Bega Circularity Valley

Ten metrics of focus will drive the RCC's approach to measuring and progressing the BCV's circularity Comm consult.

Horizon 1		1-2 years									
											
		Waste generation/repurposing	Water	Soil	Biodiversity	Energy/GHG emissions	Nutrients/Animal feed	Packaging and logistics	Animal care	Community/education/Innovation/Aged Care	Rural economy/tourism
Horizon 2		3-5 years									
KEY DATA		Tonnes of waste to landfill Tonnes of waste diverted from landfill Recycling rate by waste stream Circular inflows and outflows	kL water used % water recovery, treatment and re-use (water circularity) Water quality (e.g. eutrophication)	Soil acidification Land productivity Rejuvenated soil No. farms with regenerative practices	Land productivity and efficiency Land use per industry/nature Local biodiversity Threatened species	% renewables GHG from landfill reduced Biofuel/gas captured Carbon offset	Soil fertility Land productivity and efficiency External nutrient input phase out	Scope 3 (Value chain) emissions decrease Single use packaging phase out % transport fleet using electric vehicles or biofuels	Reducing animal emissions Reduced animal waste Hormone-free/organic fed	Population growth \$ community funding Poverty rate Homelessness rate Local stakeholders engaged, circular participation % Domestic Violence rates	\$ Invested into economy from solution # jobs created Unemployment rate No./\$ training programs Skills improvement # new businesses and industries Private investment Regional growth
Horizon 3		5-10 years									
OUTCOME		Closed loop	Water recovery and reuse	Soil and land preservation	Biodiversity in business model	100% renewable electricity by 2030	Closed soil nutrient cycles	Circular logistics	Holistic animal care	Rural (mental) health Barometer	No.1 Food & Agri-Innovation Hub in Australia
KEY DATA		Close to zero waste to landfill \$ Re-manufactured goods sold \$ trade in recycled/reused materials % Waste-to-Hydrogen energy	% of water is recovered or reused (Waste-to-Hydrogen) Recovered waterways Water quality	Re-forestation Re-wilded regions Closed soil nutrient cycle Land productivity # farms with regenerative practices	Re-forestation Re-wilded regions Local biodiversity Threatened species	% Renewable energy Biofuels captured Carbon sequestered	Limited input of external nutrients Nutrient recycling	Scope 3 emissions minimised % of transport fleet using electric vehicles or biofuels No. companies with a circular business model	# credentials issued # patents for animal care initiatives	Population growth \$ community funding Poverty rate Local stakeholders engaged circularity participation % Mental and general healthcare costs	No. jobs created Unemployment rate Training programs Business innovation (start ups and social enterprises) Private investment in regional growth % circular revenue/growth

Current Key project: National Circularity Centre



Collaboration and harnessing current efforts



Rabobank



Circular Economy Program for Australian fishing and aquaculture

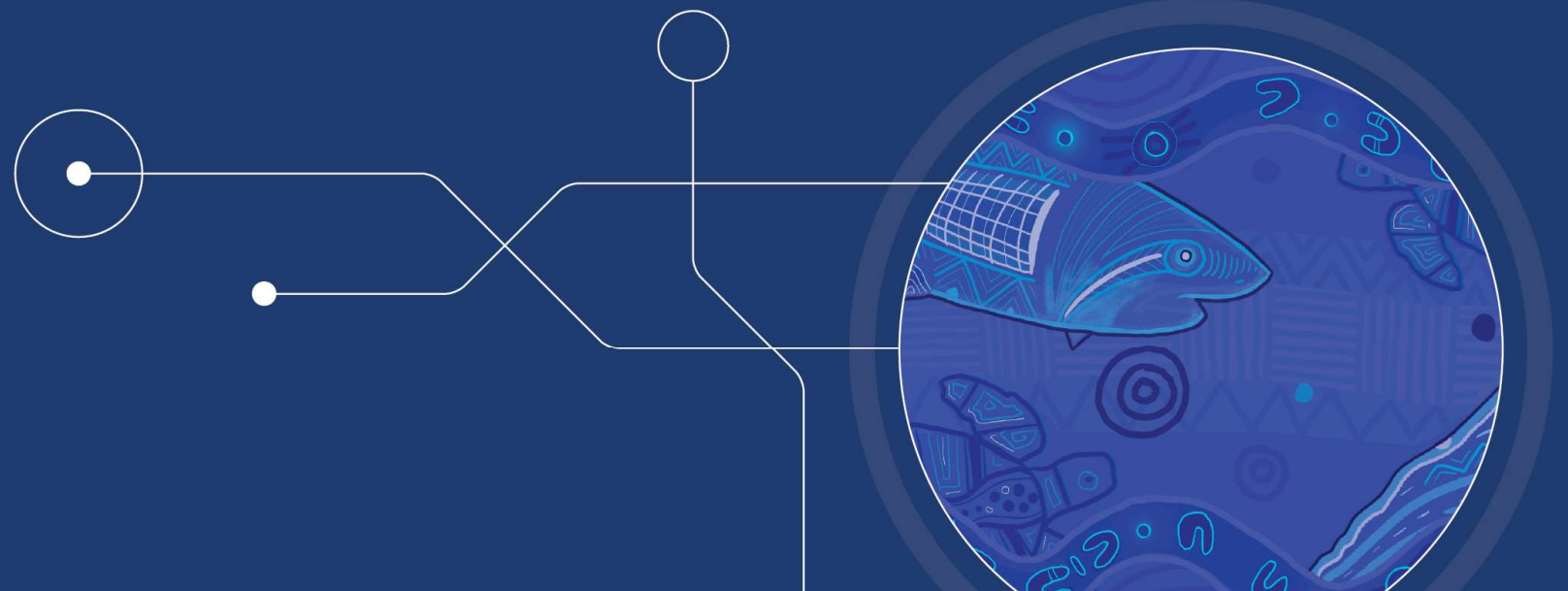


FRDC

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DEVELOPMENT CORPORATION



FRDC acknowledges the Traditional Owners of Country throughout Australia, and recognises their continuing connection to lands, waters and culture. We pay our respect to Elders past and present.

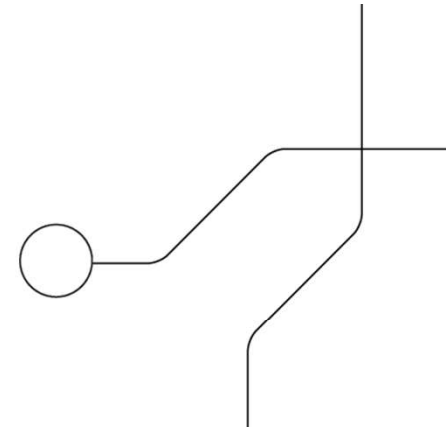


Who are the Fisheries Research and Development Corporation?

We are a co-funded partnership between the Australian Government and fisheries and aquaculture. We are a statutory corporation under the *Primary Industries Research and Development Act 1989* (the PIRD Act) and are responsible to the Minister for Agriculture, Fisheries and Forestry.

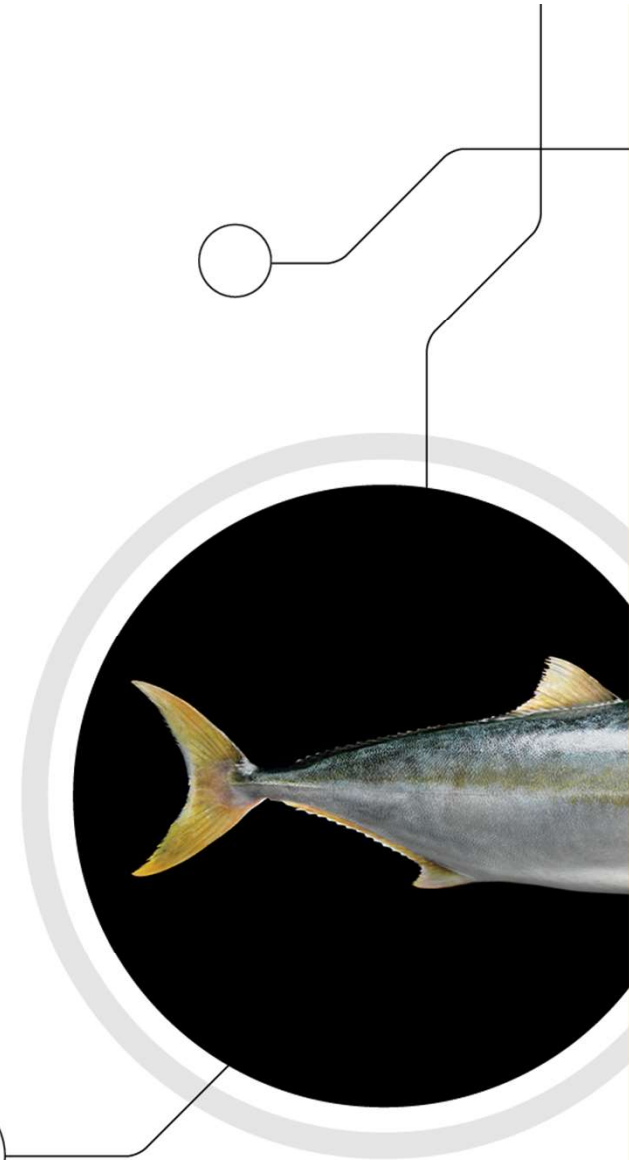
We plan, invest in and manage R&D for fishing and aquaculture and the wider community, and we encourage adoption of the resulting knowledge and innovation for impact. We coordinate government and industry investment and work with stakeholders to establish and address their R&D priorities.

Aboriginal * Commercial Wild Catch * Aquaculture * Recreational



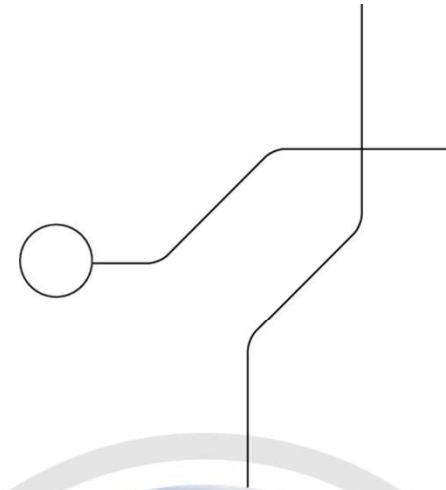
How did we get here?

- Planning processes found that there were 10 strategic areas in FRDC's R&D plan that would need a programmatic approach
- Circular Economy is a need/opportunity that crosses all four sectors, all jurisdictions, all levels of the supply chain, across industries and across international borders
- Accelerating pace of international standard setting – esp in Europe
- Increasing demand for opportunities to meet our needs without causing unnecessary damage/waste
- Nobody can go circular alone – community effort at all scales



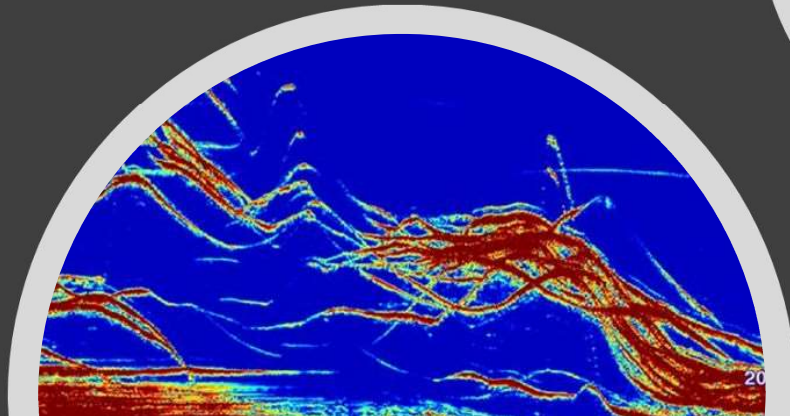
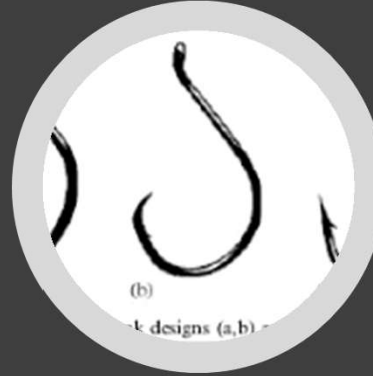
We are building on some great work

- 2020-078 Circular economy opportunities for fisheries and aquaculture in Australia
- 2019-128 Assessing the benefits of sea urchin processing waste as an agricultural fertilizer and soil ameliorant
- 2021-089 Climate resilient wild catch fisheries
- 2021-055: Artificial reefs: suitability of recycled materials for integration into purpose built artificial reefs and enhancing marine productivity, biodiversity and social outcomes
- 2013-021: Using local knowledge to understand linkages between ecosystem processes, seagrass change and fisheries productivity to improve ecosystem-based management



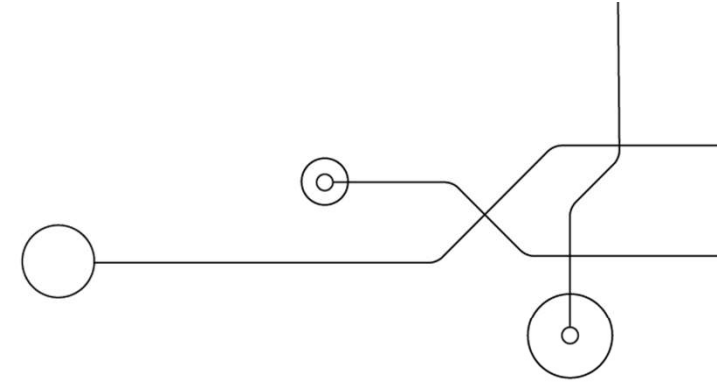
Change principles – accelerating change

- See the need for change
- See themselves in the change/see the change occurring
- Feel that they can change
- Believe that others are too



What is the opportunity with this program?

- Identify and stop opportunity and profit leakages
- Track progress and use data for multiple reporting purposes
 - Opportunities to increase market access
 - Opportunities to tap into sustainability-focused finance
- Credentials to improve capability and capacity
- Become a part of an enduring community – get inventive



Initiative 2 - Circular Capacity Building

Two and a half-day circular capacity building to be hosted in Bega in person and is open to entities within the fisheries value chain.

Aim to:

- **Raise awareness and understanding of circular economy within the fisheries value chain**
- **Set up foundations and focus on educating the wider region and industry on circularity practices, interventions to implement and identification of the resources required to support actions**
- **Ideate and develop circular roadmaps that draw upon [the results of the Materials Flow Analysis \(Initiative 1\)](#) to solve one or more of the challenges and / or opportunities identified to embrace greater circularity in the fisheries sector (for both environmental and commercial value add).**

This event will host a representative cohort of the fisheries sector including business, government, industry associations, research institutes, suppliers and others motivated to transition the sector towards a circular economy.

FRDC & RCC are seeking the involvement of organisations that are motivated to address challenges within the fisheries value chain and realise new circular opportunities. Collaborative efforts will be key in developing sector-wide solutions and driving innovation within the fisheries sector.

The ask:

- **Inviting 2-3 representatives from selected organisations to physically participate in the two and a half day accelerator.**

Initiative 3: Circular Measurement

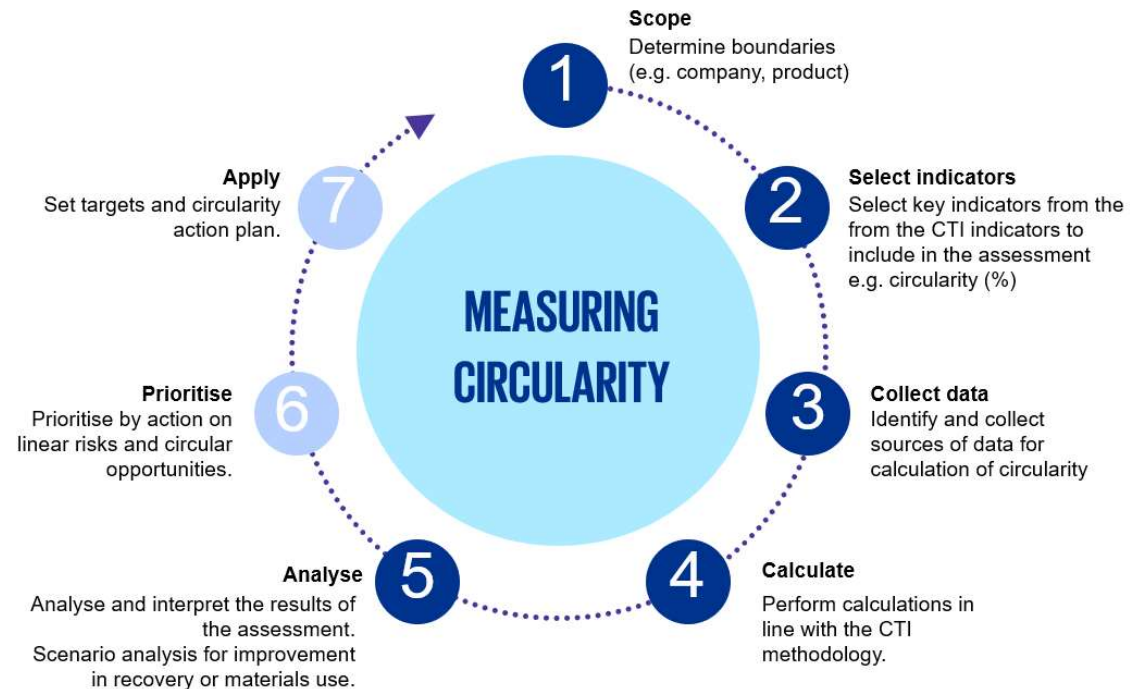
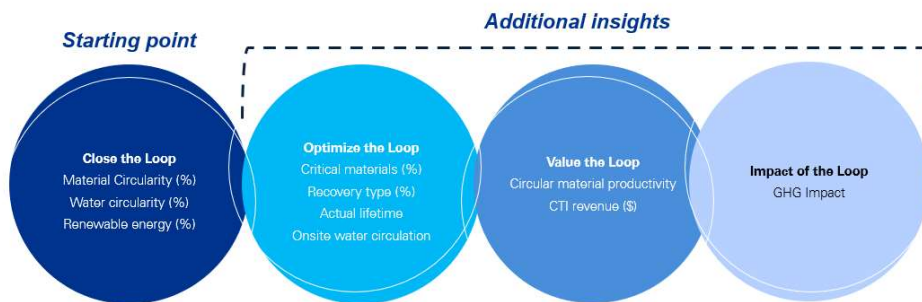
The aim of Initiative 3 is to support select fisheries and aquacultures entities to measure circularity of their business operations through Circular Transition Indicators (CTI). This assessment will enable participating entities to baseline circularity and drive operational improvement.

The scope of the CTI assessment will be for a baseline year for the entity's operations as a whole.

Circularity Transition Indicators include elements such as:

- % material circularity
- % water circularity
- % renewable energy
- Circular material productivity
- CTI revenue

Additional indicators outlined below and the process for a CTI assessment is outlined at right.



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Key areas of research



OCEAN LAW AND POLICY >



OCEANS GOVERNANCE >



MARINE ENVIRONMENTAL
PROTECTION >



MARITIME STRATEGY AND
SECURITY >



FISH IN SUSTAINABLE
FOOD SYSTEMS >



FISHERIES ECONOMICS
AND MANAGEMENT >



BLUE ECONOMY >



Accelerating Ideas

316

startups and scaleups

Products under development



87 in 2022
660 since 2016



Sea Health Products

As a result of the program, my business has an exciting, achievable vision to work towards and a strategy to get there. We are beginning to see some incredible results.

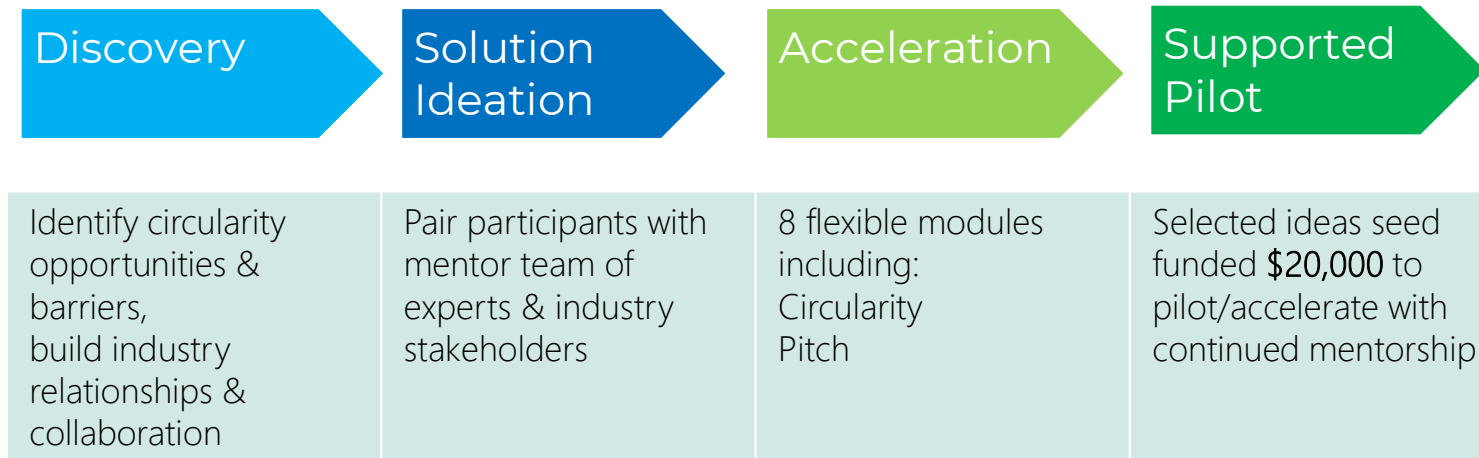
Jo Lane



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FRDC Circularity Accelerator



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Circularity in Fisheries and Aquaculture – Key contacts

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Initiative 1 (National MFA and opportunity analysis) 

Initiative 2 (Circular Advantage – Circular capacity building)

Initiative 3 (Circular Measurement):

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Initiative 4: Circular Accelerator

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Initiative 5 (Community of Practice)

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