



Australian Government  
Department of Industry,  
Science and Resources

**AusIndustry**  
Cooperative Research  
Centres Program



**Annual Report**  
2021-2022



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# ANNUAL HIGHLIGHTS



**71**

**Partners**  
engaged



**26**

**Active & Complete**  
Research projects  
taking total to 43



**\$20m**

**investment value**  
of Food Agility Research Projects  
taking total to \$33m



**23**

**peer reviewed publications**  
taking total to 57



**\$592m**

**of economic impact**  
to be generated from all projects



**57**

**HDR students**  
in the Food Agility Education Program



**450+**

**attendees at the**  
Digital Agrifood Summit 2022





***“Food Agility CRC has established itself at the heart of an ecosystem that connects people, companies, knowledge and technology, to apply our smarts as a nation to address the biggest challenges in food production and supply”***

## Message from the Chair

We are now past that vital halfway mark for a Cooperative Research Centre. This is the point where years of strategy come to fruition, where we begin to see real impact from our investments and where well-oiled teams and processes make project delivery hum. I can, without doubt, say that Food Agility CRC has surpassed expectations in these respects.

Indeed, with four years to go, Food Agility has already exceeded, or is on track to exceed, all requirements contained in our 10-year Commonwealth Agreement.

The 3 Pillar Strategy spearheaded by CEO Richard Norton and ably implemented by the team, continues to attract interest and investment. In this past financial year, 2021 – 2022, Food Agility CRC added 10 new projects to its portfolio, totalling \$13.2 million in cash investment. This brings the total project portfolio to \$33 million cash investment plus considerable investment in-kind. Our active and completed projects are estimated to generate \$592 million in economic impact annually and \$5.5 billion over 10 years.

Our new projects span the agrifood industry and its myriad challenges. We launched a major \$6.5million carbon estimation project with AACo, Australia's largest landholder and beef producer. We also commenced a project that aims to solve the connectivity divide, creating roving WiFi devices that connect people and things across our vast landscapes.

We launched a new cybersecurity project with Bosch and Yamaha Motor. And the Global Digital Farm is up and running as a test bed for new technologies. Importantly, these projects also bring on board burgeoning Australian agtech companies like Farmbot, Myriota, Zetifi and FLINTPro, connected with the latest research from our eight partner universities.

This new knowledge doesn't rest within our project teams. Education is at the heart of what we do, through our Higher Degree by Research Program which has so far provided scholarships to 57 students, our monthly seminars involving

hundreds of participants across the country, the 2021 Research Symposium involving all of our researchers, and our successful annual event, which was relaunched in 2022 as the Digital Agrifood Summit and delivered in partnership with Charles Sturt University. This year more than 350 people attended in person and another 100 tuned in via the virtual platform.

Indeed, over its relatively short lifetime, Food Agility CRC has established itself at the heart of an ecosystem that connects people, companies, knowledge and technology, to apply our smarts as a nation to address the biggest challenges in food production and supply. That our CEO, Richard Norton, has also served as the interim CEO of the Future Food Systems CRC, has only strengthened this ecosystem.

Our recent achievements have been set against the backdrop of COVID, which continues to challenge us as individuals, as communities and as industries. I commend the team for their resilience and adaptability. They have embodied the meaning of agile. I would like to congratulate our Chief Scientist, Professor David Lamb, who this year became the first Australian ever to be awarded the prestigious Pierre C. Robert Precision Agriculture Award, presented by the International Society of Precision Agriculture. David is the driving force of our research portfolio and in many ways, the heart and soul of Food Agility CRC and the Global Digital Farm.

Finally, I would like to thank my fellow board members. In the 2021 – 22 financial year, we farewelled Professor Kate McGrath and welcomed Dr Peter Riddles AM. The Board's considerable expertise continues to guide Food Agility's successful strategy and will be invaluable as we enter these final years of the CRC.

**Dr Anne Astin AM PSM  
Chair, Food Agility CRC**



***“This is an enviable position for any CRC to be in at this stage of its lifecycle but we won’t rest because we’ve met targets in a government contract, we want to see that impact figure even higher”***

## Message from the CEO

Food Agility is firmly focussed on delivering positive outcomes and impacts for our strategic partners, industry, and the Australian agrifood sector. At just over halfway in our lifecycle, we have already exceeded or are well on our way to exceeding every target set out in our Commonwealth milestones.

- Cash contribution target of \$37 million – currently at \$37.3 million and forecast to reach \$39 million by FY27
- In-kind contribution target of \$126 million – currently at \$54 m and forecast to reach \$180 million by FY27
- 55 HDR graduates – we currently have 47 active students, 10 that have completed or graduated and another 8 scholarships to allocate

That success comes down to three things:

- We’re focussed on problems that matter
- We have the right strategy
- Our people know what they’re doing and they care deeply about it

Food Agility projects are estimated to generate \$592 million in economic impact annually and \$5.5 billion over 10 years. This is a continuation of the first six years of the CRC’s life, when the economic impact amounted to \$3.55 billion. The methodology used to calculate that impact figure has been independently audited by ANCIL Allen.

This is an enviable position for any CRC to be in at this stage of its lifecycle, but we won’t rest because we’ve met targets in a government contract, we want to see that impact figure even higher. Food Agility has a further 10 projects valued at \$15.4 million in the immediate pipeline, with seven of those already approved ready to contract. This leaves us with \$2.2 million in free cash still to invest and a strategic reserve of \$2.1 million.

We are winding down project development engine and focussing on project delivery and wrap up to drive commercialisation and the adoption of project outcomes. There’s no doubt we will leave an enduring legacy, the Global Digital Farm, new technologies and tools, AgTech Finder and the Digital Agrifood Summit.

We’re also sharing what we’ve learned with other CRCs and looking for opportunities to share resources and minimise the duplication that exists across CRCs. My time as the interim CEO of Future Food Systems has demonstrated the potential to explore shared services models.

Food Agility has been a training ground for future CRC leaders with former Chief Operating Officer Clare Rutherford now Chief Executive of SmartCrete CRC. That we had the calibre of Dr Mick Schaefer in our team to take on her COO role is a testament to the quality of our staff. I’d like to thank the Food Agility team and the Board and look forward to seeing the CRC go from strength to strength.

**Richard Norton**  
**CEO, Food Agility CRC**

# Meet the Board



**Dr Anne Astin AM PSM**

Chair

*Key Skills:* Governance, Food Safety, Strategy, Science, Government

*Representing:* Independent



**Mr Mick Keogh OAM**

Director

*Key Skills:* Agriculture, R&D, Policy, Governance, Economic

*Representing:* Independent



**Mr Philip Marcus Clark AO**

Director

*Key Skills:* Accounting standards, Capital markets, Corporate governance, Finance, Retail non-discretionary, Innovation, Marketing, Real Estate, Strategy

*Representing:* Independent



**Ms Jacqueline Wilson-Smith**

Director

*Key Skills:* Innovation, R&D, Strategy, Food science, Manufacturing

*Representing:* Independent



**Dr Rob Wilson AM**

Director

*Key Skills:* AgriFood – commercial industry, R&D management, Strategy, Livestock

*Representing:* Independent



**Dr Michele Allan**

Director

*Key Skills:* Manufacturing, Strategic R&D, Innovation, Strategy, Risk, Commercialisation

*Representing:* FIAL Representative



**Dr Peter Riddles AM**

Director

*Key Skills:* Research, Science, Strategy, Education, Technology, Economic development

*Representing:* Research Body Representative



**Prof Kate McGrath**

(term ended October 2021)

Director

*Key Skills:* Research, Science, Strategy, Education, Technology, Economic

*Representing:* Research Body Representative



# ACHIEVEMENTS





Professor David Lamb

### International award for Food Agility Chief Scientist

This year Food Agility's Chief Scientist, Professor David Lamb, received global recognition for his contribution to precision agriculture, with the International Precision Agriculture Society's Pierre C. Robert Precision Agriculture Award. In a career in precision agriculture spanning more than 30 years Prof. Lamb has championed the concept of smart farming. He led the launch of Australia's first SMART Farm at the University of New England in Armidale and, more recently, helped establish the Global Digital Farm at Charles Sturt University in Wagga Wagga.

***“Meeting the challenges of food production today and into the future requires the marriage of STEM and agriculture and that is what precision agriculture is about”***

Professor David Lamb

### AgTech Finder ([www.agtechfinder.com](http://www.agtechfinder.com))

Food Agility continues to develop AgTech Finder, an online platform where farmers can search, sort, and compare agtech products to meet their needs. It's part of our commitment to drive digital adoption in the agrifood sector. There are now more than 350 agtech products on the platform with 54 new vendors listed in the past year. It's striking a chord with users too, attracting an average of more than 1,200 monthly visitors, 10 per cent of those are return users.



AgTech Finder



# RESEARCH AT A GLANCE

*Food Agility's strategy, focussing on 3 Pillars with the greatest impact and that make best use of expertise, is delivering results with \$20.3 million invested in 20 projects, planned or underway.*



## The Global Digital Farm

Food Agility is working with Charles Sturt University to transform a 1600-hectare commercial farm into a 'landscape laboratory' to develop, test, and validate new sensing and agricultural technologies. Three projects have been launched in the past year with more to be rolled out very soon.

- Farm-wide Wi-Fi - Tractors and trucks will become roving Wi-Fi devices to provide long-range communication.
- Water leak detection – Using advanced modelling to reduce the time it takes to discover a water leak.
- Haystack fire prevention – Using data analytics to prevent spontaneous haystack fires.



## AI & Robotics

Working with international teams from The Yield Technology Solutions, Bosch, UTS and Yamaha Motors this pillar is developing technologies like smart robotic solutions to automate and optimise farming operations.

- 2022 saw the launch of the \$1.5m project to strengthen data privacy and security. The outcomes from this work will be broadly published and adopted into Bosch's global portfolio of data solutions.
- Another project is combining robotics, micro-climate weather services and artificial intelligence for wine grape production.

*Image courtesy of Jackie Cooper, Jack of hearts studio*



## Carbon & Natural Capital

This pillar is focused on tools and incentives for managing carbon and other forms of natural capital in farming systems.

- Rangelands Carbon – developing an accurate and cost-effective way to estimate carbon in Australian Rangelands landscapes.
- Cool Soil Initiative – A paddock to product partnership bringing together key players in the grains supply chain to work with grain growers to explore practices to improve the health of their soil, increase yield, and reduce on-farm greenhouse gas emissions.
- Partnering with NAB around the role of natural capital and other sustainability measures in the finance sector.
- Working with National Farmers Federation to review, improve and embed national standards for data and data sharing in agriculture.







### Rangelands Carbon: a \$6.5m collaboration to develop an affordable way to estimate soil carbon and enhance sustainability

This three-year Food Agility project brings together Australia's largest landholder and biggest red meat producer AACo, scientists, and businesses already working in the industry. It is a key project in our 'Carbon and Natural Capital Pillar' with research to inform and underpin the evolution of the Australian carbon farming market.

Farmers want to manage carbon in soil and vegetation to build profitability, sustainability and resilience as well as respond to market demands and meet emissions targets. But measuring that carbon across vast rangelands can cost millions. Even with the data, understanding management options and sequestration potential is difficult.

The project also includes Cibo Labs, FLINTpro (Mullion Group), Carbon Link, University of Technology Sydney, Federation University and Charles Sturt University. The team aims to develop accurate and cost-effective models and tools to estimate soil and vegetation carbon in Australian rangelands, which make up 75 per cent of the country's landmass.

This will help farmers make decisions to proactively manage their soil, pasture and vegetation for carbon sequestration, creating a lasting change in sustainable land management. It also has the potential to overcome the barrier of the high cost of carbon measurement and open the door for more farmers to participate in carbon markets, creating new revenue streams.



## Win:win for producers and technologists in research to protect data in digital agriculture

A \$1.5million dollar partnership between Food Agility, Bosch and the University of Technology will strengthen data privacy and security across Australia's agriculture industry. The collection and sharing of agricultural data has vast potential to improve Australia's agricultural productivity, efficiency, yield and economic growth. However, unlocking this potential requires appropriate levels of privacy and security across the entirety of the data life cycle.

***“This project is about trust. Without it, the benefits of smart agriculture will never be fully realised”***

Gavin Smith, Bosch Oceania

The research will establish a framework for the inception of data that protects personally- identifiable information and complies with global anti-trust laws. It will also focus on data privacy in machine learning and explore ways to create trusted digital cleanrooms for data marketplaces.

The new insights and technologies generated through this project will be published broadly and adopted into Bosch's global portfolio of data solutions, including other publicly funded projects like CRYPT ECS or AgriGaia and open-source initiatives that promote the applicability and adoption of privacy-preserving computing technologies, such as Carbyne Stack.





# COMMERCIALISATION AND UTILISATION



*Food Agility is focussed on empowering the commercial success of Intellectual Property (IP) generated within collaborative research projects by instilling Agile project management frameworks in active projects and setting appropriate IP utilisation pathways.*



### New tool helps WA farmers become in-field scientists

A new tool has been developed by Australian grain tech company NGIS as part of a three-year Food Agility collaboration. In the three-year project, Western Australian farmers, researchers and technologists developed a process for grower-driven experimentation supported by robust statistical analysis through the OFE Platform. The Platform leverages next generation cloud geospatial technology to effectively analyse field trials that incorporate the underlying variability in paddock productivity.

*“The data analysis across the paddock found there was real potential to increase the yield on historically lower-performing soil types. I was able to change my management on those soil types and it paid off”*

Mick Caughey, WA farmer

### Digital track-and-trace system shows benefits for horticultural producers, retailers, and consumers

A Food Agility collaborative research program used GS1 data standards to create a digital map of properties and the movement of products in NSW cherry and potato supply chains. Trials demonstrated the system can be used to recall products within 60 seconds.

*“If living through the pandemic has taught us anything it is that in the event of disasters, either natural or biosecurity, the best outcome is obtained through rapid response. This technology provides us this capability”*

Frank Mitolo, Mitolo Family Farms

The system also has potential to be a framework for electronic certification to boost market access and cut compliance costs for growers, along with providing an opportunity for customer engagement. The pilot project provides the framework for data standards and integration of traceability systems that could be expanded to other agrifood supply chains



### Leveraging research and development on the path to commercialisation

For Australian agtech start-up Zetifi being part of a Food Agility collaboration with the University of Technology Sydney and Charles Sturt University is accelerating product development paving the way for commercialisation and business expansion. The 'Farm-wide Wi-Fi' project team is building custom antenna arrays that can be fitted to mobile and stationary farming equipment to provide long-range communication and internet coverage. The collaboration is allowing the team to rapidly prototype and test emerging technologies. The IP being developed both directly in the project, and through the systems needed to support it, is enabling Zetifi to create unique solutions that have put it in a strong position to raise capital to bring those solutions to market at scale.

***“This collaboration allows us to rapidly prototype and test emerging technologies before commercialising them”***

Dan Winson, Zetifi





# EDUCATION AND TRAINING



*HDR student Allister Clarke (right) was part of an expert panel discussion on the main stage at the Digital Agrifood Summit. Image courtesy of Jackie Cooper, Jack of hearts studio*



### Higher Degree by Research (HDR) portfolio

The list of Food Agility HDR graduates is growing with 10 students who have now completed their research. We have 47 active students and another eight scholarships that have been allocated. One scholarship has been awarded through the Industry HDR Scheme launched in 2021. This puts us on track to meet the Commonwealth target of 55 HDR graduates. A full list of higher degree research (HDR) scholarships is provided in Appendix 3.

Food Agility also hosted 13 MBA students through the Ducere Global Business School in a 14-week course program and we continue to work with Ducere on new projects and initiatives.

### HDR outcomes informing new research

Dr Emma Leonard has completed her PhD titled, 'A Change Management Approach to Unlocking the Value of Digital Agriculture for Family Farming Businesses'. Dr Leonard is now a key consultant on our Australian Ag Data Exchange project where she is applying her PhD outputs to this new research.

***“It feels great to have been through the PhD process successfully and I value the learning opportunities this has provided about my topic, research techniques, new software and about myself”***

Dr Emma Leonard



Dr Emma Leonard



Food Agility HDR  
student Joshua Gilbert

### HDR student a rising star

Food Agility HDR student Joshua Gilbert was awarded the 2021 rising star award at the Nature Conservation Council's NSW Environmental Awards, in recognition of his commitment to conservation of the environment, including climate change advocacy and his research into Indigenous agricultural interests.



# FOOD AGILITY EVENTS





## Digital Agrifood Summit 2022

More than 350 people attended the two-day event hosted by Food Agility, Charles Sturt University and AgriPark in Wagga Wagga from 1 to 2 June 2022, while another 100 tuned in to the keynote and expert panel discussions through the livestream. The Summit also included live technology demonstrations at the Global Digital Farm, an exhibition featuring 20 agtech companies, showcases of emerging research and a gala dinner hosted by Prof. Stan Grant Jnr.

*From robotics and artificial intelligence to the opportunities and pitfalls in carbon farming, and how a circular economy can deliver jobs and growth to regional communities – the Digital Agrifood Summit explored the technology and trends transforming agriculture.*



## Sharing research in online events

Food Agility's 2021 research symposium, held online from 12-13 October 2021, was developed in response to our industry partners desire to learn more about the technical aspects of our broader research portfolio. The event saw engaging presentations from research teams and resulted in new connections being developed across different projects.

We have continued our monthly seminar series to showcase the work of our strategic partners and build the capacity of our research community. Topics included social science to foster practice change and high-performance computing in agriculture and ecology research.

*Images courtesy of Jackie Cooper, Jack of hearts studio*





*Images courtesy of Jackie Cooper, Jack of hearts studio*





# FINANCIALS

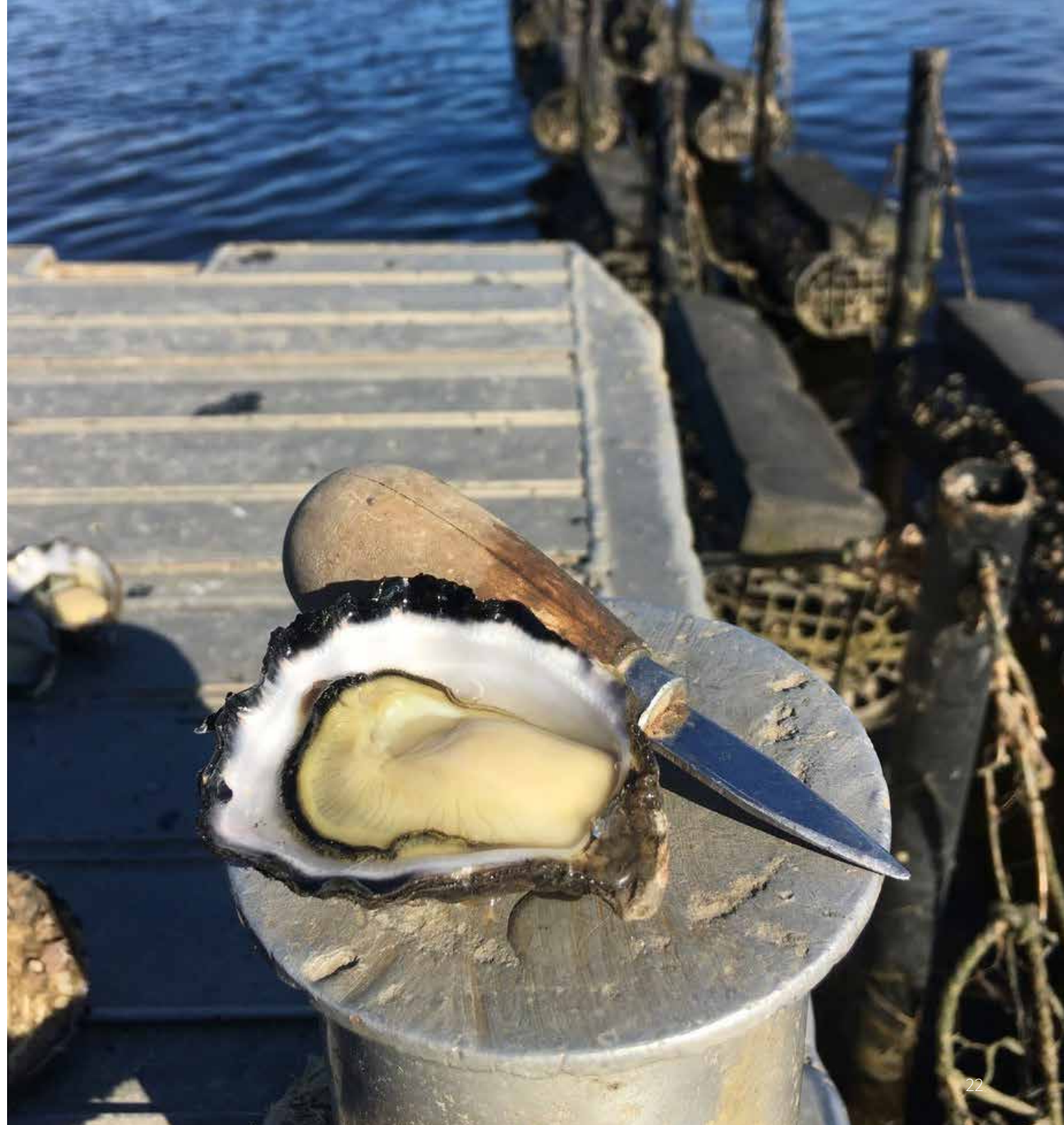


For the financial year ending 30 June 2022, Food Agility CRC had a surplus of \$1.1m from \$12.1m revenue (excluding in-kind contributions), calculated on an accrual's basis.

Revenue was made up of \$7.5m from Government grants and \$4.6m cash contributions from partners. In-kind contributions for the period was \$26.5m, a substantial increase on the \$7.9m in FY21.

The Food Agility CRC stands in a favourable financial position, with working capital of \$9.8m, a current ratio of approximately 4.2, and net assets of \$9.8m

*Image courtesy of Angela Riepsamen  
(Goodnight Oysters)*





# APPENDICES





# Appendix 1: Projects

No.	Name	Partners	Description	Duration	Total Cash Value	Status
FA001	Valuing Nature in Viticulture	NAB, Australian Wine Research Institute, QUT	Finding correlations between environmental stewardship of viticultural producers and their ongoing financial outcomes.	2	\$146,715	Complete
FA002	Improving Food Safety in NSW Oysters	NSW DPI, The Yield, University of Technology Sydney	Deployment of real-time salinity sensors to collect detailed data on salinity and temperature in Oyster estuaries. Data is being used to update harvest management plans from rainfall to salinity, model oyster diseases such as QX and Winter Mortality, and build a business case for direct salinity sensing in oyster harvest management.	3	\$1,474,926	Complete
FA003	Data-driven grain profitability through On-Farm Experimentation	WA DPIRD, Curtin University, NGIS, CSBP	Development of evidence-based analysis of farm systems and management to improve farm level learning and adoption of new digital tools and services. Data will be collected to model farmer decision making and create sophisticated data analytics and validation algorithms.	3	\$1,009,500	Complete
FA004	Seafood Tracking and Traceability	Sydney Fish Market, University of Technology Sydney, UCOT	Development of an end-to-end Snapper traceability system using image recognition technology, e-nose sensing technology, blockchain and data analytics to provide a digital traceability and fish freshness verification system for the Sydney Fish Market.	1.5	\$608,475	Complete
FA006	Beefledger Export Smart Contracts Project: Proof of Concept	BeefLedger, QUT	Research and development into blockchain technology to reduce the incidence of food fraud through crypto economic systems that incentivise people within the supply chain to maintain product security and integrity.	2	\$910,000	Complete



No.	Name	Partners	Description	Duration	Total Cash Value	Status
FA008	Enhancing Provenance and Prediction for Whole Grain Rice Quality	Sunrice, RRAPL, Charles Sturt University, Hitachi, BizCubed	This project exists to increase the level of whole grain yield across the rice industry, from 58% to 60%. This will have an impact of \$ 14.5m increase in revenue per annum.	3	\$608,000	On track
FA010	Data-Driven Regional Development: Gippsland	Food & Fibre Gippsland, RMIT	Review of data silos and opportunities for shared data in the Gippsland Region.	0.25	\$25,000	Complete
FA016	Yarrabilba Circular Food Economy	Lendlease, QUT	Develop Australia's first 'sustainable food city' at Lendlease's Yarrabilba community in South East Queensland. The project will create a scalable framework for a fully tested, digitally integrated, sustainable urban agriculture model with a prototype community compost bin sensor and incentivisation program.	3	\$584,000	Complete
FA019	Predicting Harvest Timing and Yield in Intensive Horticulture	The Yield, University of Technology Sydney, Costa, Treasury Wine Estate	Development of harvest timing and yield predictive modelling for viticulture and berry crops to reduce yield uncertainty. Data collected from The Yield's microclimate sensing systems will be combined with historical farm data and the microclimate and crop modelling expertise of UTS.	2	\$797,715	Complete
FA021	Critical Digital Supply Chain Intervention Points	Mulgowie, QDAF, QUT	Scoping study of Mulgowie's major horticultural value chains and opportunities for digital intervention.	0.5	\$45,000	Complete



No.	Name	Partners	Description	Duration	Total Cash Value	Status
FA022	On Farm Water Demand	Curtin University, WA DPIRD, Swan Systems, Southern Forests Food Council	This project exists to enable agrifood producers in the Warren-Donnelly catchment make relating to water based on agribusiness profit drivers. This industry-led project will improve the sustainability of farm businesses and the regional economy by participation in and benefiting from digital agriculture.	2	\$815,000	On track
FA025	Scoping Study: Unlocking the Power of Digital for Poultry Meat	AgriFutures, University of New England	Exploring the potential for digital innovation and improved data use, trust, and governance within the Australian poultry sector. The study will identify the challenges and opportunities for data collection, address the uses of existing data, and consider what new data should be collected and how it should be used.	1	\$120,000	Complete
FA028	Trusted Supply Chain Study	Australian Farm Institute, Meat & Livestock Australia	Defining and quantifying the components of trust in agricultural supply chains to inform development of digital platforms.	0.5	\$70,000	Complete
FA040	Wine Industry Body Review	AWRI	Exploring the industry body structure of the wine sector to identify opportunities to create shared digital resources to support industry wide digital enhancement.	0.5	\$40,000	Complete
FA042	Deploying real time sensors to meet Summerfruit export requirements for China	Summerfruit Australia Ltd, AgVic, RMIT, Rubens Technologies, Green Atlas	This project exists to improve the total export quality of Australian summer fruits to Asia. If successful, this will help exporters achieve 2-3x (on their domestic price per box) on a shipment to China. This could be worth \$70-80m within 5-10 years.	2	\$1,099,000	On track



No.	Name	Partners	Description	Duration	Total Cash Value	Status
FA046	Improving Avocado Exports	Costa, QUT, QDAF	Improve the avocado export supply chain to deliver an Australian premium and reduce avocado export claims. Validated by an additional \$1.6m in revenue from exports to Asia by 2025.	2	\$660,000	On track
FA048	Predicting Green Bean Harvest and Yield	Mulgowie Farming Company, QDAF, QUT	This project exists to improve alignment between Mulgowie's (green beans) sales and production plans in order to better match supply with demand. The goal is to increase green beans profits by \$1-2m by end of 2022	3	\$630,000	On track
FA049	Predicting Kiwifruit Count & Size	UTS, The Yield	This project exists to create an accurate annual crop estimate of Zespri's supply chain. This would have the impact of \$20m per annum.	2	\$600,000	Complete
FA066	Grazing Intelligence – smart grazing, higher profits, better environments	NSW DPI, Pasture.io	This project exists to improve farm profitability by 20% through an animal and feedbase modelling tool that will help farmers predict feed availability and optimise the purchase of additional feed.	2	\$800,000	On track
FA069	Decision Maker Extension Tool	Federation University, Southern Farming Systems, Marcus Oldham College	This project exists to enable farmers to make sound decisions that they understand, using a decision support tool that leverages a framework that is backed by data and proven decision sciences.	0.25	\$65,000	Complete
FA071	Real Time Animal ID & Tracking - TerraCipher	TerraCipher, CSU, Integrity Systems Company	This project aims to support a red meat industry which understands the value of data and encourages data sharing throughout the value chain to drive new economic activity.	2	\$500,000	On track



No.	Name	Partners	Description	Duration	Total Cash Value	Status
FA073	Opportunities for utilising DNA based technologies to enhance traceability and profitability in the Australian Red Meat industry	UNE, ISC, Airlie Solutions, Rural Analytics	This project is a 6 month scoping study where the team will assess opportunities for utilising DNA based technologies to enhance traceability and profitability in the Australian Red Meat industry	0.5	\$100,000	Complete
FA074	ISC Red Meat Analytic Sprint	DesignIt	The project will identify which data opportunities across the red meat supply chain offer the highest impact in the focus areas of integrity, biosecurity and compliance (ISC Strategic Priorities) both for the domestic supply chains and international market access.	0.1		Complete
FA076	Transforming Australian Shellfish Production	UTS, NSW DPI, Western Australian Agriculture Authority (WAA), NSW Farmers' Association (NSWFA)	This project aims to transform shellfish safety and disease response in two major production regions, NSW and WA. This will directly deliver \$800,000 per year in improved regulatory practices and enable savings of ~\$5m per year in reduced losses	3	\$1,400,000	On track
FA078	Clinical Mastitis Treatment Decision Tool	UTS, CSU, University of Sydney (USyd), Dairy Australia, DataGene Limited, Coles	This project exists to reduce the use of antibiotics in the treatment of mastitis in dairy cows, and to ensure that the antibiotics used are the most appropriate. When successful, we'll see a reduction antibiotic use and an improvement in treatment outcomes, health and welfare of dairy cows.	3	\$1,282,010	On track
FA080	Cool Soil Initiative	Mars Corporation, Kellogg (Aust.) Pty Ltd, CSU, Manildra Group, Allied Pinacle	This project exists to deliver a scientifically credible framework for the food industry to support cropping farmers in the reduction of GHG emissions, leading to increased long-term sustainability and yield stability, through the adoption of innovative agronomic strategies to increase soil health and related function.	3	\$2,490,000	On track

No.	Name	Partners	Description	Duration	Total Cash Value	Status
FA081	Cherry Plus Traceability	NSW DPI	This \$90,000, one-year project used GS1 data standards and the new GS1 Digital Link QR code to create a digital map of properties and products in the NSW cherry and potato industries. The data is managed via FreshChain's fully integrated, blockchain enabled, paddock to plate assurance system.	1	\$86,000	Complete
FA099	WA Farm Data Sharing	DPIRD, GGA	This collaborative research project will help growers make more sophisticated investment decisions using their own data by developing a self-service web-based productivity reporting tool.	3	\$652,500	On track
FA101	Haystack Fire Prevention	CSU, IAG, Myriota	The project team will review what pieces of data are most essential to understanding haystack degradation, as a precursor to fires, and how to process that data so that it can be transmitted through the existing limitations of satellite technologies. This will allow for monitoring on properties that have low telecommunications coverage.	1	\$275,000	On track
FA102	Water Leak Detection	CSU, FarmBot	This project seeks to create timely alerts via the remote detection of leaks. The goal is to reduce the time taken to identify a major leak to under 1 hour, and a minor leak to under 24 hours.	1.5	\$101,000	On track
FA103	Farm-wide Wi-Fi	CSU, UTS, Zetifi	The team is building antenna arrays that can be fitted to mobile and stationary farming equipment to provide long-range communication.	1.2	\$300,000	On track



No.	Name	Partners	Description	Duration	Total Cash Value	Status
FA107	Optimised Carbon and Nutrient Management	Fed Uni, Precision Agriculture	Enabling farmers to better understand soil health through new analytical insights.	2	\$750,000	On track
FA110	Rangelands Carbon	UTS, CSU, Fed Uni, AACo, CiboLabs, CarbonLink, Mullion Group	This \$6.5m collaboration will develop an accurate and affordable way to estimate carbon in Australian Rangelands landscapes.	3.1	\$6,603,033	On track
FA115	Robotics Ready AI in Viticulture	UTS, The Yield, Yamaha Motor, TWE	This project will explore the opportunities presented by combining robotics, micro-climate weather services and artificial intelligence (AI) for wine grape production.	2	\$820,000	On track
FA117	Protecting Data in Digital Agriculture	UTS, Bosch	This project aims to overcome these broad global challenges of data privacy and security in three key areas of the data value chain.	3	\$1,550,000	On track
FA119	Pig Welfare and Pork Provenance	Curtin, BeanStalk AgTech, PIWA, Craig Mostyn, Xsights Digital, Derby Industries Pty Ltd	Developing a system where information from tags on individual pigs can be used to quickly identify and respond to animal health issues in commercial piggeries, and create a digital record to share information through the supply chain.	3	\$1,189,917	On track
FA121	Australian Agriculture Data Exchange	CSU, Meat & Livestock Australia		0.7	\$597,729	On track
FA123	Agriculture Production System Technology Mapping	AgriFutures	This project will explore the value of agtech and digital innovation in five industries, Ginger, Rice, Export Fodder, Hemp and Jackfruit.	0.58	\$150,000	On track

## Appendix 2: Publications

Project /Activity	Authors	Title	Journal	Date
Research staff	Sonam Peden, Ron Bradbury, David Lamb and Mark Hedley	RF Loss Model for Tree Canopies with Varying Water Content	Journal of Electromagnetic Analysis and Applications, 2021, 13, 83-101. (DOI: 10.4236/jemaa.2021.136006)	2021
Research staff	Sonam Peden, Ronald C. Bradbury, David William Lamb, Mark Hedley	Prediction of Water Content of Eucalyptus Leaves using 2.4 GHz Radio Wave	Journal of Electromagnetic Analysis and Applications. 13: 111-122. (DOI: 10.4236/jemaa.2021.138008)	2021
Research staff	Andre Colaco, Michael Schaefer and Robert Bramley	Broadacre Mapping of Wheat Biomass Using Ground-Based LiDAR Technology	Remote Sensing. 2021, 13, 3218. (DOI: 10.3390/rs13163218)	2021
Research staff	Shukhrat Shokirov, Michael Schaefer, Shaun R. Levick, Tommaso Jucker, Justin Borevitz, Ilhom Abdurahmanov, Kara Youngentob	Multi-platform approach for detecting coarse woody debris in a landscape with varied ground cover	International Journal of Remote Sensing. 42 (24), 9324-9350 (DOI: 10.1080/01431161.2021.1995072)	2021
Research staff	Sonam Peden, Ron Bradbury, David Lamb and Mark Hedley	A Two-Point Iteration Method to Predict Canopy Water Content from RF Loss	Smart Agricultural Technology. 1:100008. (DOI: 10.1016/j.atech.2021.100008)	2021
Research staff	Sadgrove, E.J., Falzon, G., Miron, D. & Lamb, D.	The Segmented Colour Feature Extreme Learning Machine: Applications in Agricultural Robotics	Agronomy 2021, 11, 2290. (DOI: <a href="https://doi.org/10.3390/agronomy11112290">https://doi.org/10.3390/agronomy11112290</a> )	2021
Research staff	Rutherford, C.	Agriculture data sharing for public good – but who pays the price?	Farm Policy Journal, FPJ1804, Dec 2021.	2021



Project /Activity	Authors	Title	Journal	Date
HDR	Stéphanie Camaréna	Engaging with Artificial Intelligence (AI) with a Bottom-Up Approach for the Purpose of Sustainability: Victorian Farmers Market Association, Melbourne Australia	Sustainability 2021, 13(16), 9314 (DOI 10.3390/su13169314)	2021
HDR	Majid Amiri, Mehran Abolhasan, Negin Shariati and Justin Lipman	Multi-band SIW Cavity Based Metamaterial Perfect Absorber	2021 IEEE Asia-Pacific Microwave Conference (APMC), 2021, pp. 347-349, doi: 10.1109/APMC52720.2021.9661924	2021
HDR	Joseph, L. Burbidge, A.H., Delhey, K., Hansen, B.D., Kleindorfer, S., Maurer, G.	Emu's First 120 Years: Landmark Papers of Change in Austral Ornithology.	Emu-Austral Ornithology 121 (4), 2021. 284-291, doi: 10.1080/01584197.2021.1993529	2021
FA002	Penelope A. Ajani, Arjun Verma, Jin Ho Kim, Stephen Woodcock, Tomohiro Nishimura, Hazel Farrell, Anthony Zammit, Steve Brett, Shauna A. Murray	Using qPCR and high-resolution sensor data to model a multi-species Pseudo-nitzschia (Bacillariophyceae) bloom in southeastern Australia	Harmful Algae. 108, 102095 (DOI 10.1016/j.hal.2021.102095)	2021
FA003/FA025	Simon Cook, Elizabeth L. Jackson, Myles J. Fisher (In Memoriam), Derek Baker, Dean Diepeveen	Embedding digital agriculture into sustainable Australian food systems: pathways and pitfalls to value creation, International Journal of Agricultural Sustainability. (DOI: 10.1080/14735903.2021.1937881).	International Journal of Agricultural Sustainability. (DOI: 10.1080/14735903.2021.1937881)	2021
FA004	Xu Wang, Guangsheng Yu, Ren Ping Liu Jian Zhang Qiang Wu Steven Su Ying He, Wentian Zhang Zongjian Zhang Litao Yu Taoping Liu Peter Loneragan Eryk Dutkiewicz, Erik Poole and Nick Paton	Blockchain enabled Fish Provenance and Quality Tracking System	IEEE Internet of Things Journal, doi: 10.1109/JIOT.2021.3109313.	2021

Project /Activity	Authors	Title	Journal	Date
FA042	Alessio Scalisi , Mark G. O'Connell, Daniele Pelliccia, Tim Plozza, Christine Frisina, Subhash Chandra and Ian Goodwin	Reliability of a Handheld Bluetooth Colourimeter and Its Application to Measuring the Effects of Time from Harvest, Row Orientation and Training System on Nectarine Skin Colour	Horticulturae 2021, 7, 255. <a href="https://doi.org/10.3390/horticulturae7080255">https://doi.org/10.3390/horticulturae7080255</a>	2021
Digital Ag Pillar	Wysel, M., Baker, D., & Billingsley, W.	Data sharing platforms: How value is created from agricultural data.	Agricultural Systems, 193, 103241 <a href="https://doi.org/10.1016/j.agsy.2021.103241">https://doi.org/10.1016/j.agsy.2021.103241</a>	2021
Digital Ag Pillar	Cook, S., E. Jackson and D. Baker	Digital Agriculture: A Tale of Unrealised Expectations?	The Australian Farmer Vol II 1 MANDATE GROUP <a href="https://www.theaustralianfarmer.com/digital-book">https://www.theaustralianfarmer.com/digital-book</a>	2021
FA028	R Heath; T Fox; S Admassu; K McRobert	Quantifying trust in agriculture supply chains	2021 MLA Final Report	2021
FA002	Penelope Ajani, Mike Dove, Hazel Farrell, Wayne O'Connor, Matt Tesoriero, Arjun Verma, Anthony Zammit, Brian Hughes, Shauna Murray	Transforming Australian Shellfish Production: Pelican Point Harvest Area - Manning River. Report on Stage 1, December 2017-March 2021	University of Technology Sydney, ISBN 978-0-646-85735-0	2022
FA002	Penelope Ajani, Mike Dove, Hazel Farrell, Wayne O'Connor, Matt Tesoriero, Arjun Verma, Anthony Zammit, Brian Hughes, Shauna Murray	Transforming Australian Shellfish Production: Lower Honeymoon Bay Harvest Area, Wagonga Inlet. Report on Stage 1, December 2017-March 2021, Sydney, Australia, pp. 54.	University of Technology Sydney, ISBN 978-0-645-4699-0-5	2022



Project /Activity	Authors	Title	Journal	Date
FA002	Penelope Ajani, Mike Dove, Hazel Farrell, Wayne O'Connor, Matt Tesoriero, Arjun Verma, Anthony Zammit, Brian Hughes, Shauna Murray	Transforming Australian Shellfish Production: Long Island Harvest Area, Wallis Lake. Report on Stage 1, December 2017-March 2021, Sydney, Australia, pp. 54.	University of Technology Sydney, ISBN 978-0-6454699-1-2	2022
HDR	Stéphanie Camaréna	Artificial Intelligence (AI) for Sustainable Institutional Food Systems: Implementation of AI Tools for School Nutrition Program Management in the United States of America	Frontiers in Sustainable Food systems	2022
HDR	Majid Amiri, Mehran Abolhasan, Negin Shariati, and Justin Lipman	Remote Water Salinity Sensor Using Metamaterial Perfect Absorber	IEEE Transactions on Antennas and Propagation, DOI 10.1109/TAP.2022.3161485.	2022

## Appendix 3: Food Agility CRC HDR Students

Given Name	Surname	Enrolment date	Expected Completion Date	Research Degree	Project Title	Host Research Institution
Allister	Clarke	01/04/2019	14/07/2022	PHD	Rapid Analysis of Rice Grain Quality	CSU
Rabin	Dulal	28/02/2022	25/10/2024	PhD	Cattle Identification using deep learning	CSU
Joshua	Gilbert	17/07/2020	29/2/2024	MPhil	Indigenous Agribusiness	CSU
Mahir	Habib	12/07/2021	11/07/2024	PhD	Using Microservice Architecture in Agriculture for Managing and Tracking Cattle	CSU
Anulipt	Chandan	21/05/2018	31/12/2022	PhD	A Blockchain Interoperability Framework to Streamline Business Operation for Achieving Business Sustainability.	CU
Wei Shan (Cassandra)	Chong	6/11/2019	05/11/2023	PHD	Benchmarking Protein Allergens and Phenolic Components Composition, and Anti-Microbial Properties of Western Australian Wattle Seeds Species	CU
Patrick	Duong	24/02/2020	23/02/2023	PHD	Optimising digital customer journey and leveraging on digital marketing strategies to attract customers' attention, interest, desire, and purchasing intention toward Australian value-added food & b...	CU
Mark	Hayes	6/05/2022	06/05/2023	PHD	An Economic Balance Sheet approach to financially quantify the agricultural risks affecting the land value of grain farms in Western Australia	CU
Erin	Jackson	1/05/2019	01/11/2021	MPhil	Spatial Variability in High Value Crops (initially focussed on truffles)	CU
Abubakar	Mohammed	13/03/2018	14/12/2022	PhD	The research aims to investigate the factors that influence blockchain technology adoption and its consequences in organizations. How blockchain can embed in organisations...guidelines for adoption.	CU
Madison	Pasquale	04/05/2019	20/11/2022	PHD	Building Vibrant but Transparent Visual Language Codes: Packaging Design, Marketing Methods and Decision-Making	CU
Sylvia	Soltyk	04/03/2019	12/03/2023	PHD	Is there a paradox in food security?	CU



Given Name	Surname	Enrolment date	Expected Completion Date	Research Degree	Project Title	Host Research Institution
Basharat	Ali	18/03/2019	18/09/2022	PhD	The Value Proposition for Australian Digital Agriculture, with a Focus on Precision Agriculture	FedUni
Rekha	Attanayake	16/09/2019	16/03/2023	PhD	An online tool for comparison of lime applications, taking into account the lime quality, availability, crop or pasture response, and economics.	FedUni
Robert	Clark	09/02/2019	28/04/2024	PhD	Predicting crop yield within the growing season at sub-paddock scale: a big data approach	FedUni
Andrew	MacLeod	2/06/2021	1/06/2024	PHD	Advancing syntactic and semantic interoperability for data in the agricultural and food industries	FedUni
Gopala	Guddanti	08/04/2021	08/04/2024	PhD	Data analytics and Smart farming	JCU
William	Harrington	03/03/2020	04/04/2023	PHD	Measuring and quantifying the benefits of improved Internet connectivity in regional and remote Australia and its effect on adoption of technology	JCU
Joseph	Perkins	01/08/2021	13/02/2025	PHD	Developing genetic tools for establishing seafood provenance	JCU
Alzayat	Saleh	01/07/2020	30/06/2024	PhD	Smart farms - Developing Deep Learning Applications for Smart Aquaculture	JCU
Philip	Browning	10/14/2019	31/12/2022	PHD	framework for Marketplace Design of IoT infrastructure, Sensor Devices and Data: A Case Study using Agricultural and Environmental Data	QUT
Thomas	Miller	27/01/2021	27/01/2024	MPhil	From Design to Implementation: Distributed Ledger Technology for Trust-less Food Supply Chains	QUT
Fathima Nushrath	Najimuddin	03/08/2020	06/02/2025	PHD	New statistical methods to design experiments for mechanistic models	QUT
Bryce	Polley	02/05/2022	30/04/2024	MPhil	Data Science to Support Sustainability in Viticulture	QUT
Bikalpa	Rajbhandari	03/01/2019	24/02/2023	PHD	Agricultural data trusts and supporting legal frameworks: Assisting Australian farming SMEs with the analytics divide	QUT
Harry	Sisley	02/02/2020	2/02/2023	PhD	Stochastic multi-commodity network flow optimisation for fresh produce	QUT
Roger	Smith	15/02/2021	30/10/2022	MPhil	Moving towards an autonomous global supply chain in the agri-food sector	QUT

Given Name	Surname	Enrolment date	Expected Completion Date	Research Degree	Project Title	Host Research Institution
Jing (Roy)	Yang	29/07/2019	24/03/2023	PhD	Forecasting Crop Production using Agronomy-informed Predictive Process Analytics	QUT
Thomas	Fahey	23/03/2020	23/09/2023	PHD	Spatial photosynthesis measurements through remote sensing in modern stone and pome fruit orchards	RMIT
Nam	Ha	07/01/2019	22/07/2023	PhD	AI-enabled sub-ppb NO2 and NH3 biomarker gas detection in agriculture crops for precision and smart farming.	RMIT
Maidul	Islam	21/12/2020	21/12/2023	PhD	Spatial Sensing Of Fruit Colour And Maturity In Stone Fruit Orchards	RMIT
Chi	Pham	01/06/2020	01/03/2023	PhD	Influencing factors of blockchain implementation in food supply chains	RMIT
Brendan	Doyle	19/12/2019	19/12/2022	PhD	Vessel classification, technology adoption and welfare assessment during Live Export	UNE
Ed	Lefley	12/03/2018	27/07/2022	PHD	Triple Helix and Regional Innovation Systems: Knowledge Transfer that enables regional growth in the Australian context	UNE
Kia	Nikoumanesh	11/01/2021	10/01/2024	PhD	Accelerating Canola Breeding by The Determination of Accurate Genomic Breeding Values and genomic selection for the Australian Canola Industry	UNE
Ruba	Al-zqebah	04/07/2020	23/08/2023	PhD	Improving the efficiency of agricultural production management using digital twining and lean principles	UTS
Hernan (Felipe)	Henriques	07/10/2020	7/10/2023	PHD	Monitoring for food safety in the NSW oyster industry	UTS
Jichao	Kan	02/02/2021	02/02/2024	PHD	Uncertainty Management in Machine Learning and its Applications in Food Data Analytics	UTS
Amit	Kumar	01/09/2019	23/02/2023	PhD	Using social media data to discover new potential Farmer-to-Consumer (F2C) markets for the Australian agrifood industry	UTS
Stuart	Martin	30/03/2019	31/03/2022	PhD	Valuing Natural Capital – Using Technology to Develop the indicators and Accounting Systems for Agricultural Enterprises to Sustainably Manage Natural Capital	UTS



Given Name	Surname	Enrolment date	Expected Completion Date	Research Degree	Project Title	Host Research Institution
Nastouh	Nikkhah	01/02/2021	31/01/2024	PHD	Wearable, Self-powered, Low Cost Integrated RFID & WSN for Cattle Location and Health Real-time Monitoring	UTS
Mohammad	Okour	30/07/2021	30/07/2024	PhD	3D sensing with deep learning to estimate lean meat yield of beef cattle	UTS
Solomon	Ould	01/07/2021	01/01/2024	PhD	IOT-based digital sensing with machine learning to predict food and beverage quality and contaminants	UTS
Kourosh	Parsaei	01/01/2020	01/01/2026	PhD	Near field sensing technology enhanced by optimization algorithms for agricultural applications.	UTS
Ali	Raza	25/03/2021	21/06/2024	PhD	Precision Farming: Efficient Simultaneous Wireless Information and Power Transfer (SWIPT) for IOT Devices	UTS
Amanath	Ullah	01/08/2019	31/07/2022	PhD	Multiband Antenna with Enhanced Radiation Efficiency for RF Energy Harvesting in Remote Location	UTS
Ali Yasin	Vergili	30/06/2019	30/06/2022	PhD	Impact of the introduction of on-line auctions on profitability within the seafood industry	UTS
Yanli	You	1/07/2022	30/06/2025	PHD	Rangelands Carbon	UTS

Given Name	Surname	Enrolment date	Expected Completion Date	Research Degree	Project Title	Host Research Institution
<b>Completed Honours</b>						
Stephen	Siswanto	03/01/2019	Complete	Hons	Rural land valuation	CU
Liam	Power	03/01/2019	Complete	Hons	Frost event prediction in broadacre agriculture	CU
Gabrielle	Torrissi	03/01/2019	Complete	Hons	user-friendly phone application for integrating the use of organic amendments into crop fertiliser application'	QUT
Ben	Vickery	03/01/2019	Complete	Hons	Analysing soil carbon with new technologies	QUT
<b>Completed PhD / Masters</b>						
Imran	Makhdoom	31/12/2016	Complete	PhD	Defense against Data & Device Integrity Attacks in Internet of Things (IoT)	UTS
Ramon	Bon	02/07/2018	Complete	MPhil	Blockchain Technology and the Principal-Agent Theory: Smart Contract Applications	QUT
Jock	McQueenie	04/04/2018	Complete	PHD	Beef Ledger - Intermediation as Practice: joining the dots between community, culture and commerce	QUT
Taoping	Liu	31/03/2017	Complete	PhD	Electronic nose-based food quality control	UTS
Thu Thuy (Tina)	Nguyen	18/01/2018	Complete	PhD	An integrated model for sustainable rural water management based on machine learning and remote sensing	UTS
Stephanie	Camarena	08/01/17	Complete (August 2022)	PHD	Artificial Intelligence in system redesign – Designing for the benefit of the whole	RMIT
Majid	Amiri	17/09/2017	Complete	PHD	Designing self-powered agriculture sensor for remote sensing purpo	UTS
Emma	Leonard	17/12/2017	Complete	PhD	Overcoming barriers to adoption of digital agriculture	UNE



Given Name	Surname	Enrolment date	Expected Completion Date	Research Degree	Project Title	Host Research Institution
Kristen	Fernandes	30/03/2018	Complete	PhD	Exploring the uses of invertebrate DNA metabarcoding (a new technology for establishing data baselines) with applications for insect pollination and disease propagation	CU
Ian	Zhou	01/01/2019	Complete	PhD	Intelligent Frost Prediction and Active Protection Cyber-physical Systems in the Agricultural sector	UTS

# Appendix 4: Governance and committees

## Governance – Board, Committees and Key Staff

Food Agility CRC is a Company Limited by Guarantee, registered with the Australian Not-For-Profit and Charity Commission. Taxation exemption is applied from the date of commencement of the CRC.

Food Agility CRC was established in April 2017 as a company limited by guarantee and officially launched on 13 June 2018.

The management and governance structure has been established consistent with structures set out in the Commonwealth and Participants Agreement, under which the CRC has been created.

Food Agility CRC has a Nominations and Selection Committee for recommending new Directors for election. This Committee meets as needed, directed by the Chair. Each year, rotation of Directors is facilitated by a method of staggered renewal considerations.

## Board Committees

### FARMCo

FARMCo is our Finance, Audit and Risk Management Committee. FARMCo meet quarterly to review budgets and organisational risks.

Membership:

- Mick Keogh (Chair)
- Rob Wilson
- Jacqui Wilson-Smith

Meetings held this Year: 4

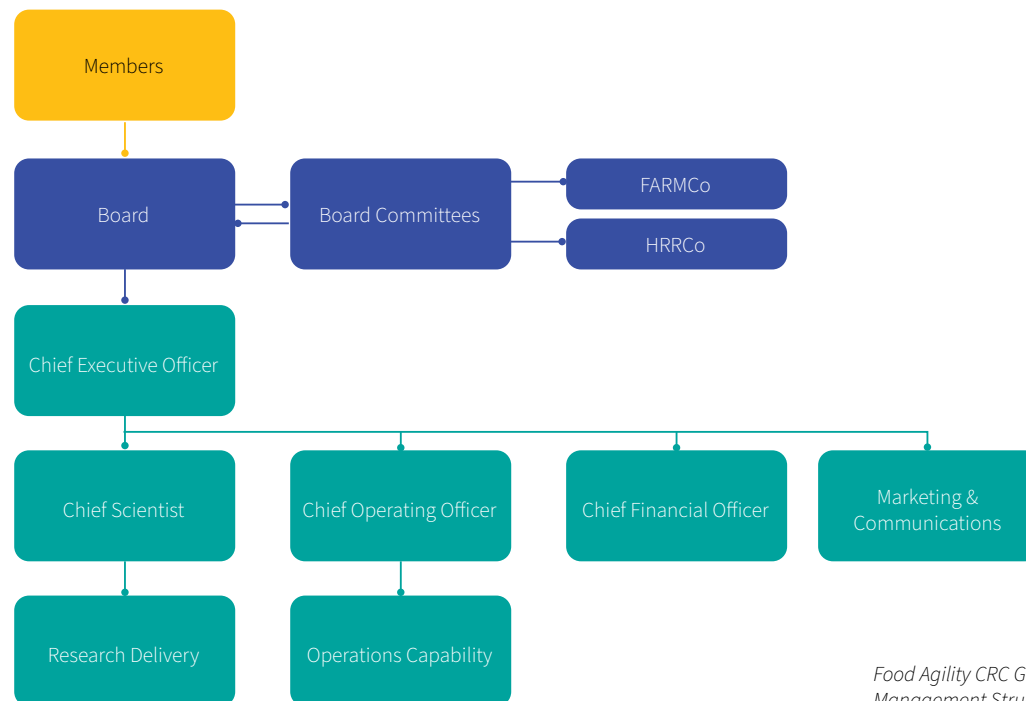
### HRRCo

The HRRCo is our Human Resource and Remuneration Committee, who meet quarterly to review and provide feedback on our organisation and salary structures.

Membership:

- Anne Astin (Chair)
- Michele Allan
- Jacqui Wilson-Smith

Meetings held this year: 2



*Food Agility CRC Governance and Management Structure*



## Appendix 5: Food Agility CRC Partners

Participant Name	Participant Type	ABN/ACN	Organisation Type
A.A Company Pty Ltd (AACo)	Partner/Participant	86 010 317 067	Industry
AgriWebb	Third Party	56 163 515 900	Industry
Agsensio Pty Ltd (Zetifi)	Third Party	98 621 129 244	Industry
Allied Pinnacle Pty Ltd	Third Party	85 161 203 005	Industry
Australian Farm Institute Limited	Partner	29 107 483 661	Other
Avoka Technologies	Partner	N/A (International)	Industry/Private Sector
Avonova Pty Ltd	Third Party	88 137 013 248	Industry
AxisTech Pty Ltd	Third Party	621 346 665	Industry
Beanstalk Agtech Pty Ltd	Third Party	64 624 305 997	Industry
Carbon Link Operations Pty Ltd	Third Party	46 609 904 010	Industry
Charles Sturt University	Partner	83 878 708 551	Research Institute/Organisation
Cherry Growers of Australia Inc	Third Party	77 797 945 686	Industry
Cibo Labs Pty Ltd	Third party	21 624 033 521	Industry
Coles Supermarkets Australia Pty Ltd	Third Party	45 004 189 708	Industry
Craig Mostyn Farms Pty Ltd	Third party	96 127 068 115	Industry
CSBP Limited	Partner	81 008 668 371	Industry/Private Sector
Curtin University of Technology	Partner	99 143 842 569	Research Institute/Organisation
Dairy Australia Limited	Third party	60 105 227 987	Other
DataGene Ltd	Third party	78 613 579 614	Industry

Participant Name	Participant Type	ABN/ACN	Organisation Type
Department of Agriculture & Food (DPI WA)	Partner	18 951 343 745	State Government
Department of Agriculture and Fisheries (DAF) (QLD GOV)	Partner	66 934 348 189	State Government
Department of Economic Development Jobs Transport and Resources (VIC Gov)	Partner	69 981 208 782	State Government
Department of Industry Skills and Regional Development (DPI NSW)	Partner	72 189 919 072	State Government
Derby Industries Pty Ltd	Third Party	86 009 033 612	Industry
FarmBot Australia Pty Ltd	Third party	72 168 531 940	Industry
Federation University Australia	Partner	51 818 692 256	Research Institute/Organisation
Food & Fibre Gippsland	Partner	20 185 883 721	Other
Food Innovation Australia Ltd	Partner	50 164 124 609	Australian Government
Freshchain Systems Pty Ltd	Third Party	70 627 353 628	Industry
Grain Grower Groups (6) WA	Third party	Various	Industry/Private Sector
Green Atlas Pty Ltd	Partner	49 627 234 842	Industry/Private Sector
Grower Group Alliance (GGA)	Third party	65 816 357 099	Industry
GS1 Australia Ltd	Third Party	67 005 529 920	Other
Harvest Road (WA) Pty Ltd	Third Party	89 164 738 655	Industry
Indicina Pty Ltd	Partner	13 612 726 333	Industry/Private Sector
Insurance Australia Group Limited	Partner	60 090 739 923	Industry/Private Sector
Integrity Systems Company	Third party	34 134 745 038	Industry/Private Sector
James Cook University	Partner	46 253 211 955	Research Institute/Organisation
Kellogg (Aust.) Pty Ltd	Third Party	30 004 110 105	Industry

Participant Name	Participant Type	ABN/ACN	Organisation Type
KPMG	Partner	51 194 660 183	Industry/Private Sector
Lendlease Communities (Yarrabilba) Pty Limited	Partner	69 103 578 436	Industry/Private Sector
Manildra Flour Mills Pty Ltd	Third Party	80 000 217 523	Industry
Marcus Oldham College	Third Party	50 071 444 409	Industry
Mars Australia Pty Ltd	Third Party	48 008 454 313	Industry
Meat and Livestock Australia	Third Party	39 081 678 364	Other
Mulgowie Fresh Pty Ltd	Partner	63 100 928 014	Industry/Private Sector
Myriota Pty Ltd	Third party	65 609 161 373	Industry
National Australia Bank Limited	Partner	12 004 044 937	Industry/Private Sector
National Farmers' Federation Limited	Partner	77 097 140 166	Other
NGIS Australia Pty Ltd	Partner	56 061 264 793	Industry/Private Sector
North Fresh Pty Ltd (Costa)	Third party	80 006 573 253	Industry/Private Sector
NSW Farmers' Association	Third party	31 000 004 651	Industry
Oyster Cloud (East 33 Ltd)	Third Party	70 636 173 281	Industry
Oyster Grower Groups NSW (12)	Third party	Various	Industry/Private Sector
Pasture.io Pty Ltd	Third Party	44 629 889 292	Industry
Pork Innovation WA Inc	Third Party	65 167 335 290	Other
Precision Agriculture Pty Ltd	Third party	82 605 962 392	Industry
Precision Agronomics Australia Pty Ltd	Partner	37 112 600 807	Industry/Private Sector
Queensland University of Technology	Partner	83 791 724 622	Research Institute/Organisation



Participant Name	Participant Type	ABN/ACN	Organisation Type
Rice Research Australia Pty Ltd	Third party	54 003 678 644	Research Institute/Organisation
Robert Bosch (Australia) Proprietary Limited	Partner	48 004 315 628	Industry/Private Sector
Royal Melbourne Institute of Technology	Partner	49 781 030 034	Research Institute/Organisation
Rubens Technologies Pty Ltd	Third party	96 627 770 085	Industry
Rural Industries Research & Development Corporation	Partner	25 203 754 319	Other
Seafarms Group Ltd	Third party	50 009 317 846	Industry
Southern Forests Food Council	Partner	19 882 662 408	Other
SummerFruit Australia Limited	Partner	51 105 962 196	Other
SunRice	Partner	55 007 481 156	Industry/Private Sector
Sydney Fish Market Pty Ltd	Partner	24 064 254 306	Industry/Private Sector
Telstra Corporation Ltd	Third Party	33 051 775 556	Industry
TerraCipher Pty Ltd	Third Party	93 645 531 746	Industry
Teys Australia Pty Ltd	Partner	38 009 872 600	Industry/Private Sector
The Australian Wine Research Institute	Partner	83 007 558 296	Research Institute/Organisation
The Mullion Group	Third party	84 169 968 647	Industry
The University of Sydney	Third Party	15 211 513 464	Research
The Yield Technology Solutions Pty Ltd	Partner	83 603 062 942	Industry/Private Sector
Treasury Wine Estates	Third party	78 145 321 320	Industry/Private Sector
Truffle and Wine Co	Third party	81 077 946 073	Industry
University of New England	Partner	75 792 454 315	Research Institute/Organisation

Participant Name	Participant Type	ABN/ACN	Organisation Type
University of Technology Sydney	Partner	77 257 696 961	Research Institute/Organisation
Western Australian Grower Groups	Third party	Various	Industry/Private Sector
Wine Australia	Third Party	89 636 749 924	Government
Woolworths	Third Party	88 000 014 675	Industry
Xsights Digital Pty Ltd	Third party	45 623 659 932	Industry
Yamaha	Third Party	N/A (International)	Industry
Zespri	Third Party	N/A (International)	Industry

# Appendix 6: Glossary of Terms and Acronyms

## 3 Pillar Strategy

Food Agility launched the 3 Pillar Strategy in 2021, focussing investments in key areas with the greatest potential for impact and that make best use of the deep expertise across the team and partners. The Pillars are the Global Digital Farm, AI and Robotics, and Carbon and Natural Capital.

## Agile

A method of project management that is characterized by the division of tasks into short phases of work and frequent reassessment and adaptation of plans.

## Blockchain

A digital distributed ledger system in which a record of transactions is maintained across multiple computers that are linked in a peer-to-peer network. Blockchains are of interest due to their high levels of encryption and autonomous trust between contracting parties.

## Circular Economy

The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended.

## Machine Learning

Machine learning is a branch of artificial intelligence and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy.

## Natural Capital

Natural Capital refers to all aspects of the natural environment needed to support life and human activity, including soil, water, plants and animals, minerals and energy resources. Projects in this space are looking at how financial institutions can quantitatively value the natural capital contained in our food production value chain as a means to encourage sustainable farming practices.

## Rangelands

The rangelands are those areas where the rainfall is too low or unreliable and the soils too poor to support regular cropping. They cover about 80 per cent of Australia and include savannas, woodlands, shrublands, grasslands and wetlands.

## Acronyms

AI	Artificial Intelligence
HDR	Higher Degree Research
CSU	Charles Sturt University
CU	Curtin University
Fed Uni	Federation University
IP	Intellectual Property
JCU	James Cook University
NSW DPI	New South Wales Department of Primary Industries
QUT	Queensland University of Technology
RMIT	Royal Melbourne Institute of Technology
UTS	University of Technology Sydney





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