



Australia's National
Science Agency



Corporate Plan 2021-22

New Australian space startup, Quasar Satellite Technologies, is set to revolutionise space communication by allowing ground stations to talk to hundreds of satellites at once using technology we developed.

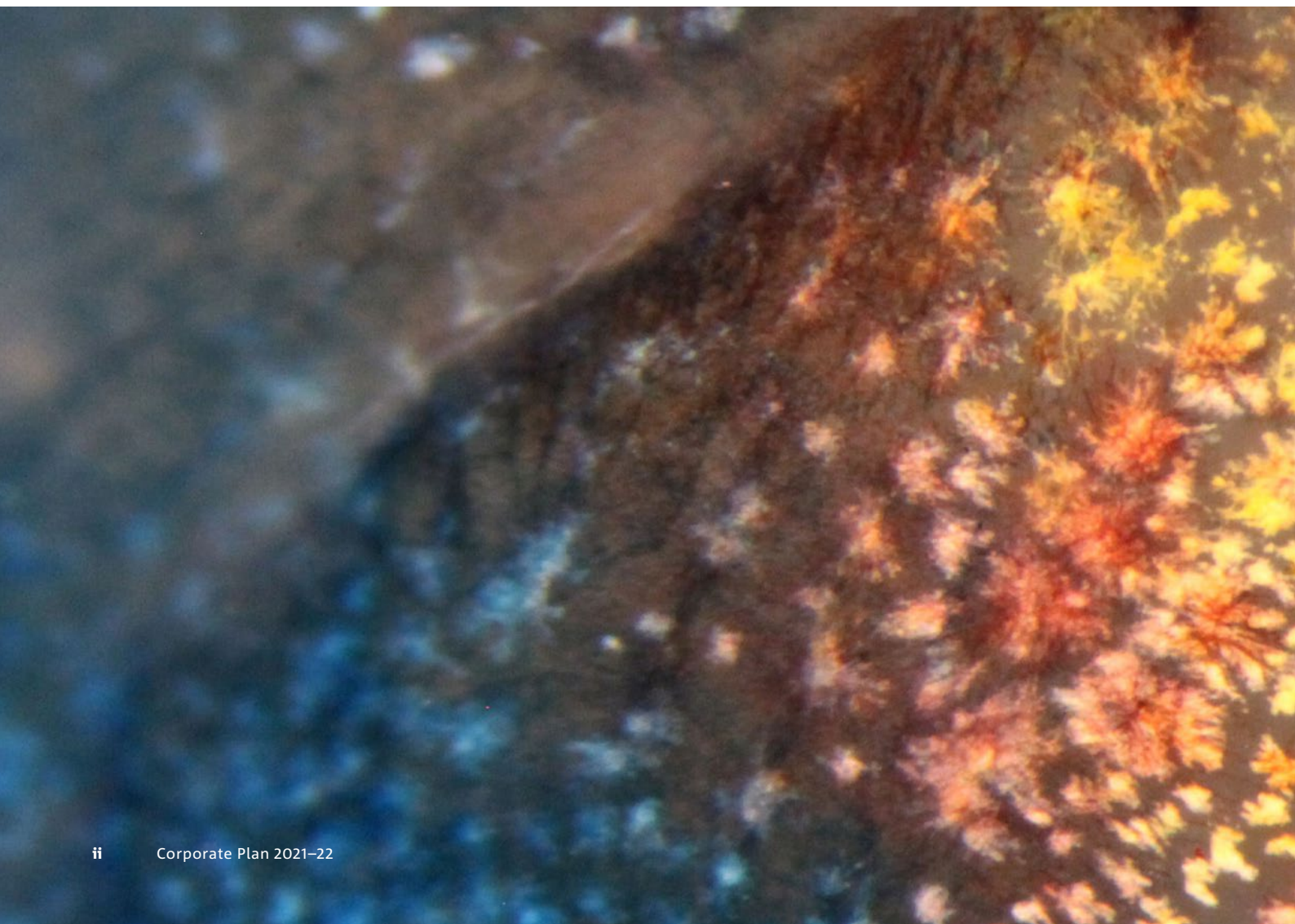
Read the Corporate Plan online at csiro.au/corporate-plan

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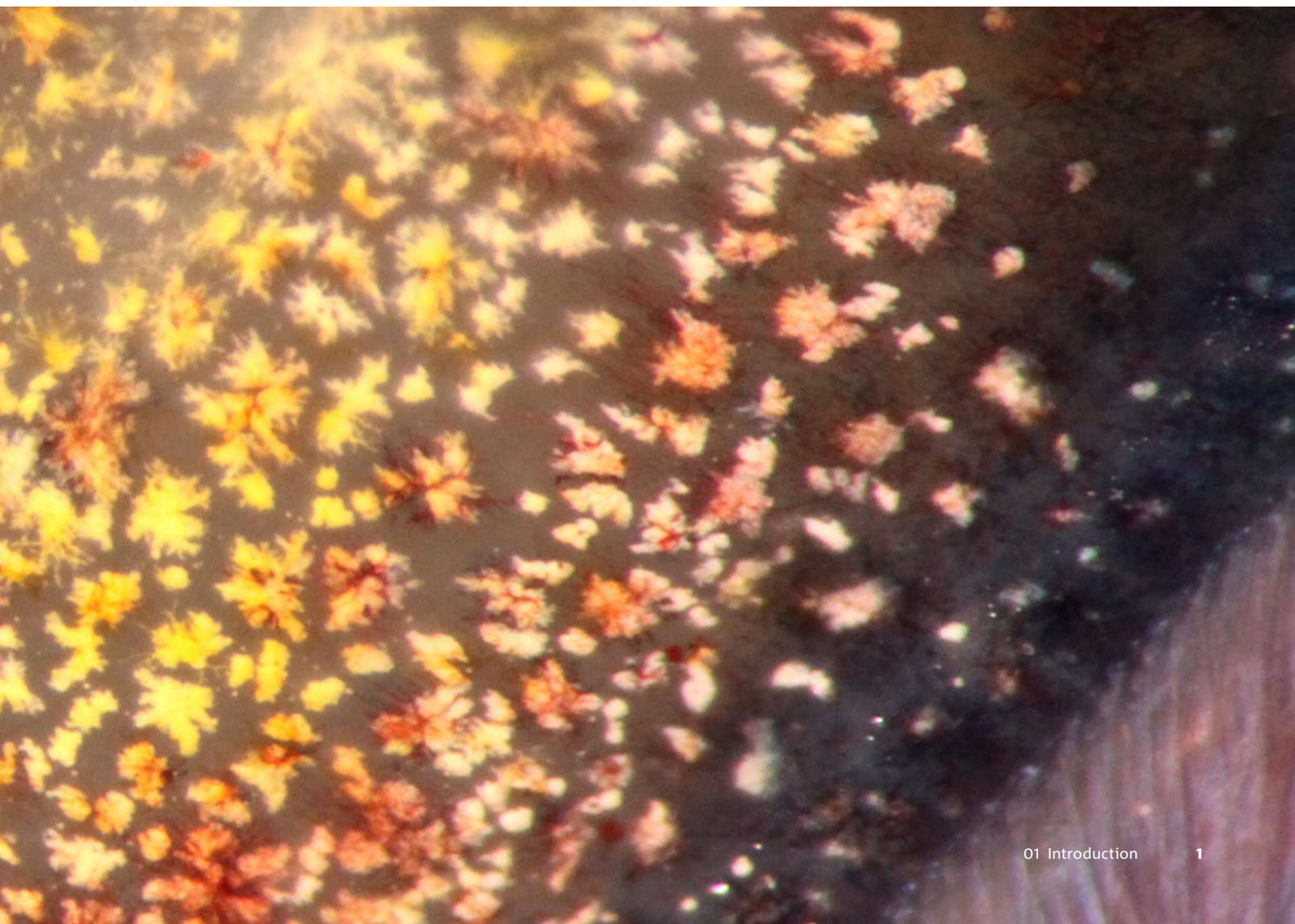
Our Novacq™ prawn feed helps farmers grow bigger, healthier prawns more sustainably. Prawns fed with Novacq™ grow on average 20–40 per cent faster and can be produced with reduced wild fish products in their diet, which means less pressure on our precious marine resources.

This image shows a prawn's colourful swimming legs, known as pleopods. Crustaceans have a unique way of producing their colours with proteins arranged in these pigment structures called chromatophores. Using a combination of nutrition, environment and genetics they can specify their body patterns in any colour from red to blue and everything in between, even fluorescent!



01

Introduction



1.1 Opening statement

On behalf of the CSIRO Board, I am pleased to present our key strategic planning document, the CSIRO Corporate Plan 2021–22.

As the impacts of COVID-19 continue to be felt around the world, the importance of trusted scientific advice has never been more central to a nation's prosperity and wellbeing. We are proud of the critical role CSIRO has played as Australia's national science agency, both as trusted advisor and collaborative innovator.

CSIRO has been at the forefront of Australia's pandemic response, from understanding the virus and delivering solutions from science for protection and detection through to harnessing science to drive our economic recovery and resilience. The scale of this impact has been made possible by CSIRO's strong levels of trust, collaboration, and track record for delivering real world impact – all of which are at the heart of this Corporate Plan.

The Corporate Plan charts the course ahead for CSIRO to continue delivering on its purpose as Australia takes steps towards emerging from this global disruption. As a nation, we are incredibly fortunate to have CSIRO's talented scientists and researchers to help shape what our future will look like. One way CSIRO will do this is through its ambitious and collaborative missions program, that bring together partners in industry, research and government for national benefit. Another is through its commercial expertise and pathways, offering services to the system that accelerate the translation of publicly funded research to create economic value for the nation.

The Plan outlines how CSIRO will deliver on its purpose for the next four years (2021–22 to 2024–25), the key priorities to deliver on our strategic direction, and how success will be measured.



It meets the requirements of s35 (1) (b) of the *Public Governance, Performance and Accountability Act 2013*, the CSIRO Statement of Expectations of February 2020 and the responding CSIRO Statement of Intent of May 2020.

Australia has been fortunate in weathering the impacts of COVID-19, in no small part due to the role of our trusted Australian scientific community. CSIRO is proud to stand alongside our partners as part of a Team Australia response to this global challenge. We are grateful that we have such a talented and capable group of people committed to making a difference for Australia and this Plan ensures CSIRO will remain at the forefront and prepared for the next challenges ahead.

David Thodey AO
Chairman of the Board

1.2 Chief Executive's foreword

In 2020, the world turned to science in the face of a global pandemic. A year later, while the pandemic is still ravaging many parts of the world, the role of science has broadened to lead recovery and resilience efforts as we consider what kind of future we want to rebuild.

As the national science agency, CSIRO is helping lead Australia to a bold, technology-led recovery with a visionary program of missions that will drive our economy and our lives forward towards a more innovative and resilient Australia.

At the heart of our ability to deliver on our purpose are our people. They have been disrupted and challenged by recent events, and we will continue to take a values-led approach to our culture, creating a workplace where our people can thrive.

Coming out of 2020 we focussed on the trends and implications relevant to our nation, so we could paint a clearer picture for what CSIRO could be in 2030. We engaged with our people and tested our thinking with other stakeholders. We confirmed that our high-level vision statement should be refined to *create a better future for Australia*.

To help us achieve our vision, this Corporate Plan is our strategy and provides a four-year view for what we will focus on. We will invest in the best science and technology solutions to solve Australia's challenges, we will evolve our sites into national laboratories supporting Australia's emerging innovation ecosystem, and leverage our commercialisation expertise to create new value, jobs, and impact from Australian science.

We will invest in research that pushes the boundaries of current knowledge where we believe that science can solve real world problems, and continue to focus our portfolio on the 'fewer but bigger' challenges that the national science agency is best placed to solve. This will contribute to Australia's recovery and resilience in areas as diverse as natural disasters and pandemic preparedness, transformation for the manufacturing and energy sectors, and utilising the power of artificial intelligence to reinvent science and solutions.

We will continue to grow our mission program, building on the launch of missions in drought resilience, future protein, trusted agrifood exports, and hydrogen industry.



We will increase the impact of Australia's research excellence with greater focus on overcoming barriers to research translation by leading and collaborating on national commercialisation programs.

With our partners, including Australia's world-class universities, we will tailor programs and focus investments to grow Australia's economy. Engaging in new and powerful ways with industry, business and venture capital will create the commercial giants of our future.

This Corporate Plan sets a bright vision for the future of Australian science, and its contribution to national prosperity.

In 2030, I imagine a CSIRO concentrated in a series of National Labs across Australia, where Labs of the Future combine all branches of science with automation, autonomy, artificial intelligence, and virtualisation.

I imagine it will be impossible to tell the difference between CSIRO people and everyone else working in our National Labs, because they collaborate so seamlessly.

And I imagine the parents of our people proudly telling everyone they know that their child is making life better for all Australians.

We look forward to working with all our partners to build a stronger, better tomorrow.

Dr Larry Marshall
Chief Executive

In the last few decades, specimen preservation methods have evolved to facilitate streamlining the high-quality molecular analyses. Genome sequencing of older specimens – especially those preserved in formalin – remains challenging. Powered by our Environomics Future Science Platform, we're developing protocols to enable whole genome sequencing and characterisation of gene expression from formalin-preserved museum tissues. From these once intractable specimens, we can recover information about how species responded to environmental challenges, helping us be better prepared to conserve and manage our biodiversity.



02

Our purpose and strategy

Our strategy articulates how we will achieve our purpose
and our future vision.



2.1 Strategy on a page

Purpose

Solving the greatest challenges through innovative science and technology.

Objectives

Primary activities to deliver our purpose

1

Conduct and encourage the translation of Australia's world-class scientific research into impact

Challenges and missions

Six challenges we're helping the nation to solve including large-scale collaborative research missions

Health and wellbeing

Food security and quality

Strategic pillars

The core areas that guide our operations

Deliver real solutions from excellent science and technology

Values

The centre of our cultural vision

People first

Further together

Vision

Create a better future for Australia.

2

Create and manage Australia's national laboratories

3

Stimulate innovation for Australian industry, academia and government

A secure Australia and region

Resilient and valuable environments

Sustainable energy and resources

Future industries

Improve innovation from greater collaboration

Bring out our best from thriving culture and teams

Making it real

Trusted

2.2 Our purpose, vision and strategy

Our strategy articulates how we will achieve our purpose and our long-term future vision. It comprises our objectives, which are supported by strategic pillars and values that guide how we seek to change.

Our purpose

Solving the greatest challenges through innovative science and technology.

Our vision

Create a better future for Australia.

Our 2030 vision describes our future state. It was created for and with our people during 2020–21 to describe a clear aspiration of our future organisation to guide choices and communicate intentions to our leaders, our people, and stakeholders. It informs our four-year Corporate Plan and planning activities.

To achieve our vision we will pursue three themes:

1. **Leading-edge science and delivery:** Motivated by national challenges and looked to and trusted to solve them. Our mission-led focus is enabled by leading-edge science and technology delivered by an agile way of working.
2. **World-class dynamic teams:** The best and brightest minds united by our purpose. Our people are enabled to work seamlessly across diverse teams and are able to develop sought-after careers in and outside Team CSIRO.
3. **Smart national labs:** We share smart infrastructure through the world's best national laboratories with our customers and partners to inspire collaboration and for national benefit.

Objectives

For over 100 years, we have been the mission-led national science agency, collaborating across the innovation system. Our primary objectives, guided by the *Science and Industry Research Act 1949*, help us to deliver on our purpose:

1. Conduct and encourage the translation of Australia's world-class scientific research into impact.
2. Create and manage Australia's national laboratories.
3. Stimulate innovation for Australian industry, academia and government.

Challenges and missions

We identified six national challenges as the areas of greatest importance to Australians. Together the challenges and missions will drive Australia's recovery and resilience following recent national crises.

Health and wellbeing

Enhancing health for all through preventive, personalised, biomedical and digital health services.

Food security and quality

Achieving sustainable regional food security and growing Australia's share of premium Agri-food markets.

A secure Australia and region

Safeguarding Australia from risks such as war, terrorism, pandemics, disasters and cyber-attacks.

Resilient and valuable environments

Enhancing the resilience, sustainable use and value of our environments.

Sustainable energy and resources

Unlocking our energy and resources potential and supporting the transition to a low emissions future.

Future industries

Creating Australia's future industries and jobs by collaborating to boost innovation performance and promote science, technology, engineering and mathematics (STEM) skills.

Missions

Our Missions program is a big, bold and inspirational initiative that aims to mobilise science, technology and innovation to bolster Australia's COVID-19 recovery, build resilience and provide practical responses to the national challenges. Due to their scale, ambition and collaborative nature, missions are being co-developed with partners in Australia and overseas.

Missions launched in 2021



Hydrogen industry: We're working to create a globally competitive Australian hydrogen industry in 2030 by lowering the cost of clean hydrogen to under \$2 per kilogram.



Future protein: We're aiming to grow Australia's protein industry by \$10 billion over the next five years by focussing on the plant protein for new markets, sustainable animal protein production and novel protein production systems.



Drought resilience: We're focussing on building resilience to droughts and reducing their impacts in Australia by 30 per cent by 2030 by driving on-farm innovation, building regional resilience and acting as a policy enabler to support Australia's drought preparedness.



Trusted agrifood exports: We're planning to boost Australian agrifood exports by \$10 billion in this decade by improving market access globally, automating export compliance and establishing a national provenance database to validate the biological origins of our agrifood.

Strategic pillars

Our pillars guide our operations and how we bring our purpose, vision, and strategy to life.

Deliver real solutions from excellent science and technology

We imagine tomorrow's needs today to create solutions and opportunities with our customers through excellent science and technology and businesses approaches.

Improve innovation from greater collaboration

We build networks of brilliant minds, working with research partners and industry customers, nationally and globally. We drive the adoption of solutions with our engineering and commercialiser role to turn great science into great solutions.

Bring out our best from thriving culture and teams

Our people belong to and drive our strong and inclusive one-CSIRO culture, and we thrive when we work with others who share our goal of making life better for all Australians.

Values

Our values guide our cultural vision by clarifying what we consider important – guiding behaviours and decision-making for all our people. Our values articulate the manner in which we work every day as we deliver on our strategy.

People first

Our first priority is the safety and wellbeing of our people. We believe in, and respect, the power of diverse perspectives. We seek out and learn from our differences. We do our very best to get all this right.

Further together

We achieve more together than we ever could alone. We listen and collaborate, in teams, across disciplines, across boundaries. We embrace ambiguity and use discussion and persistence to generate unique solutions to complex problems.

Making it real

We do science with real impact. We thrive when taking on the big challenges facing the world. We take educated risks and defy convention. We celebrate successes and failures and leverage them to learn as we strive to be the force for positive change.

Trusted

We're driven by purpose but remain objective. We fight misinformation with facts. We earn trust everywhere through everything we do. We trust each other and we hold each other accountable. Together our actions drive Australia's trust in CSIRO.

Our researchers are testing COVID-19 vaccines at our Australian Centre for Disease Preparedness.



We're solving farming challenges using artificial intelligence to identify the boundary of every paddock in Australia's grain growing region from space. This technology, called ePaddocks™ can help farmers to monitor their paddocks and optimise their use throughout the growing season. This satellite image, overlaid by ePaddocks™, shows paddock boundaries (in yellow) in Western Australia.

Image: © Copernicus Sentinel data 2019



03

Our operating environment

The external insights, risk management framework and collaborative partnerships that influence our strategy.



3.1 Trends influencing our strategy

We have been predicting and solving challenges for more than 100 years.

We leverage external insights and our own science foresights, such as the *Australian National Outlook 2019*, the *COVID-19: Recovery and resilience* report, our Future Science and Technology plan and industry roadmaps to inform our research portfolio decisions and strategic direction.

We actively monitor and analyse key global, national and internal trends and other events that influence our strategic direction.

Recent national crises such as bushfires and COVID-19 help to prioritise our areas of focus in addressing these challenges through innovation and future-proofing Australia.

Global megatrends

Global connectivity and pandemics

Balancing growth with sustainability

The fourth industrial revolution

Rise of Asia

Health of an ageing world

Australian innovation system trends

Global innovation performance

R&D investment

Skill transition

Trust in institutions

CSIRO internal trends

Role in solving national challenges

Shifting research methods

Future of work

Health, safety and wellbeing

Infrastructure and property footprint

Growing Australia's quantum technology industry

Without quantum physics, there would be no internet, computers or magnetic resonance imaging. Now, scientists and engineers can unlock unprecedented capabilities to isolate, control and sense individual quantum particles like never before. The ability to directly manipulate quantum states and take advantage of quantum properties has massive implications across science and technology. While quantum technologies have been considered an academic curiosity, there is rapidly growing recognition that they have the potential to enable solutions to real-world problems that are currently intractable. Quantum technologies are a major growth opportunity for Australian industry, forecasted to generate \$4 billion in revenue and 16,000 new jobs nationally by 2040.

Quantum technologies have been recognised as a transformative cross-cutting capability and an Emerging Horizon (quantum biology) in our Future Science and Technology plan. Our new Quantum Technologies Future Science Platform aims to combine our expanded quantum technology capability with our existing diverse domain expertise and work with world-leading, home-grown collaborators to address translational research challenges, support the development of a sovereign quantum technologies industry, and deliver domestic and global impact.





Global trends influencing our strategy

THE TREND

Global connectivity and pandemics

In an increasingly connected world, flows of trade, capital, information and people deepen and broaden at an unprecedented rate. Economic growth needs to balance with challenges such as the rapid spread of pandemics, including COVID-19, increased nationalism, and regional areas of focus.

Balancing growth with sustainability

A rising global population with increasing economic activities are depleting the natural environment. Climate change is an economic, environmental and social issue with natural disasters becoming more intense and frequent. The cost of natural disasters in 2020 were estimated at US \$268 billion² and the World Economic Forum's top five risks are related to climate change and infectious diseases³.

The fourth industrial revolution

The fourth industrial revolution will see exponential change merging the physical, biological and digital worlds. It is already disrupting entire systems of production, management and governance and expected to create \$10–15 trillion of global opportunity⁵.

Rise of Asia

Growth in Asia has shifted the world's economic centre of gravity east. Foreign direct investments to South East Asian nations are rising at a record level⁸. China and India continue to spend heavily in research and development (R&D) and will remain the engine of growth for Asia and the world.

Health of an ageing world

The global population aged 60 years or more is forecast to make up to 22 per cent of the total population by 2050, up from 12 per cent in 2012⁹. This shift is also expected to reduce the proportion of the working age population.

THE IMPACT

Pandemics, such as COVID-19, have caused social and economic crises across the world and exposed the lack of preparedness and resilience of the increasingly globalised and interconnected economy¹. They necessitate the international coordination of research and development activities exemplified by the work of the Coalition for Epidemic Preparedness Innovations. The Australian Government recently announced an additional biosecurity package to strengthen the nation's ability to keep out exotic pests and diseases and fight outbreaks.

Australia's climate has warmed on average by 1.4°C since 1910, leading to an increase in the frequency of extreme heat events and the severity of drought conditions during periods of below average rainfall⁴. Oceans around Australia are acidifying leading to longer and more frequent marine heatwaves⁴. These trends are projected to continue. Increased societal awareness and climate-related concerns are driving pressure to balance economic growth with sustainable operations.

Globally, COVID-19 has accelerated digital transformation by seven years⁶. It has also demonstrated that digital innovation is critical in Australia's ability to successfully manage and mitigate social and health crisis. Digital technology is expected to contribute between \$140 billion and \$250 billion to Australia's gross domestic product by 2025⁷.

Compared to OECD peers, Australia has captured a third less value from digital innovation⁵.

As a regional neighbour, Australia stands to benefit from Asia's growing share of the global gross domestic product (GDP) and 2.4 billion middle-class households. A network of 15 free trade agreements gives the country a preferential access to fast-growing markets like China, India, Indonesia and Singapore.

A rapidly ageing world population is affecting economic outputs and escalating healthcare expenditure by changing people's lifestyles, the services they demand, and the structure and function of the labour market.

Along with responding to COVID-19 implications, there are growing opportunities for the innovation sector to advance medical sciences and deliver services that will improve the health and wellbeing of the ageing world.

CSIRO'S RESPONSE

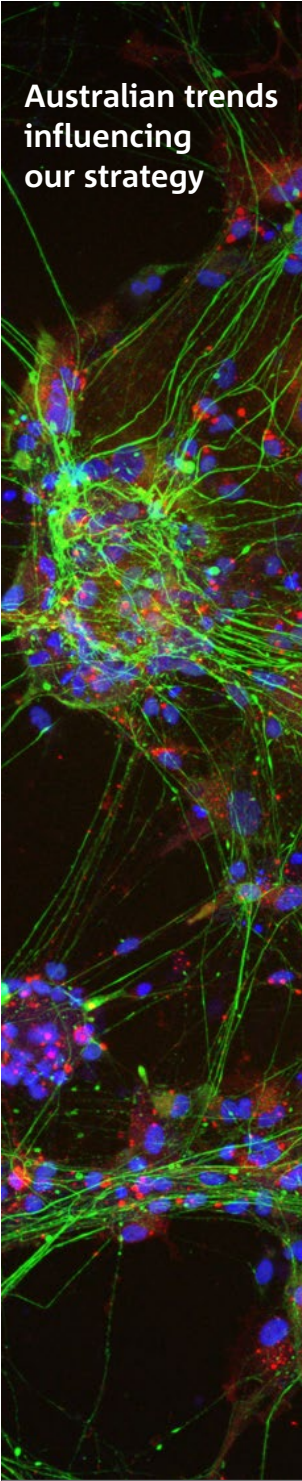
In response to COVID-19, our research with government and industry is focussed on developing faster, more sensitive diagnostic and surveillance tools, new vaccines and antiviral therapeutics to limit the wide-ranging impacts on our closely interconnected and highly mobile world. Through international collaborations and infrastructure such as our Australian Centre for Disease Preparedness, we aim to future-proof Australia against the impacts of future pandemics and support global efforts to manage and mitigate the threat of emerging infectious diseases.

Through our large-scale programs of work such as missions, we are using a multi-stakeholder approach to co-develop and deliver practical solutions to Australia's national challenges. We are applying our systems thinking, digital, land and water management, urban area planning, modelling, and sustainable energy and resources capability, often at complex system levels, to deliver innovative solutions for a resilient and valuable environment.

We are embracing digitised laboratories, lab-on-a-chip and sensing technologies while transforming the skills profile of our workforce to capture and capitalise on the emerging opportunities for Australia and secure the nation's digital future. Through our role in leading the Australian government's National Artificial Intelligence Centre and related programs, we aim to assist in the delivery of the nation's digital economy strategy.

In partnership with other government departments, our strategic pillar Improve innovation from greater collaboration capitalises on our geographic proximity and strong ties to Asia as well as broader global links including to the United States and Europe. Our ASEAN presence in Vietnam, Singapore and Indonesia connects us to Asian hotspots of knowledge generation, trade opportunities and global talent.

Through our Business Units, Future Science Platforms and missions program (read more on pages 33 and 42) we are developing a range of preventative, personalised biomedical and digital health solutions that will enhance the health, wellbeing and lifespan of all Australians.



Australian trends influencing our strategy

THE TREND

Global innovation performance

Australia's innovation system's research accomplishments are impressive, underpinned by a strong education system. However, the translation of research to commercial outcomes is relatively poor. Australia's ranking dropped three places in the last two years to 23rd of 131 economies in the Global Innovation Index rankings¹⁰.

R&D investment

Australia's gross and business expenditure on R&D as a proportion of the GDP has fallen in recent years. Gross R&D was 1.88 per cent in 2015–16 and declined to 1.79 per cent in 2017–18¹², well below the OECD average of 2.36 per cent¹³. Business R&D was 1 per cent in 2015–16 and declined to 0.94 per cent in 2017–18¹².

Skill transition

STEM and digital skills will play a vital role in realising Australia's innovation and productivity potential.

Over the next 5–10 years, 50 per cent of employers expect an increased demand for STEM-trained professionals¹⁶.

Trust in institutions

A lack of trust stems from competence and ethical behaviour and threatens institutions' social license to operate. In recent years, overall trust in Australian institutions has declined but saw a rapid rise due to bushfire and COVID-19 responses¹⁹. The increased eyes on the role of science solutions has also meant increased levels of scepticism and conspiracy theories.

THE IMPACT

To compete globally in the \$1.6 trillion innovation race¹¹, Australia will have to undertake more new-to-world innovation compared to incremental innovation, and improve its collaboration, translational and commercialisation track records.

Overall, CSIRO's share of the government's total R&D appropriation investment has been slowly declining from the peaks of around 30 per cent in the early 1980s to around 9 per cent in 2019–20¹⁴.

However, in the last few years, the proportion of GovERD being funded by industry has risen from 7.7 per cent in 2012 to 10.3 per cent in 2018¹⁵. Also, there is an increased interest by institutional investors, private equity, and venture capitalists to invest in research commercialisation. A likely reason is the stronger links that publicly funded research agencies such as CSIRO have developed with industry. Australia now ranks ahead of countries such as the United States in the proportion of GovERD funded by industry.

In Australian schools, enrolments in STEM subjects are at the lowest levels in 20 years¹⁷ and long-term trends indicate students' performance in STEM subjects is slipping¹⁸. The country's talent pool is limited by gender inequity in STEM education and careers.

Australia needs a greater investment to develop students' STEM skills.

Fortunately, 33 per cent in Australia and New Zealand have a high level of trust in their scientists compared to 18 per cent globally²⁰. This level of trust is key to R&D organisations like CSIRO building consensus and developing solutions that address challenges.

CSIRO'S RESPONSE


As an agency primarily focussed on applied research, we are driven by delivering solutions from science. We collaborate with all key players of the innovation system – universities, government and industry – to solve the greatest challenges. We seek to strengthen Australia's research commercialisation and entrepreneurial skills through our Global Strategy, and commercialisation services and programs such as Innovation Connections and the CSIRO Innovation Fund (read more on page 47). A key focus of our strategy is to work with small to medium-sized enterprises to build national sovereignty in core industries such as manufacturing and food to optimise Australia's independence in times of limited trade, pandemics and global competitiveness for resources.

We are focused on driving and encouraging system-level collaboration to maximise the social, environmental and economic impact of R&D investment for our nation.

Our strategic pillar Improve innovation from greater collaboration, along with the larger programs of work such as missions, our infrastructure and sites and commercialisation services invigorate greater collaboration across the global innovation system to support R&D investments to go further and address issues aligned to national priorities.

We strengthen Australia's STEM talent pipeline through education and outreach programs in schools and communities (read more on page 33). We continue that support for universities through our Industry PhD program and postdoctoral fellowships to encourage STEM professionals into industry and the innovation system. As a Male Champion of Change for gender equity, our Chief Executive leads our efforts to promote diversity in STEM. This is supported by our commitment to the Science in Australia Gender Equity program and strong advocacy for the Advancing Women in STEM strategy and the Women in STEM Decadal Plan.

To build our trusted advisor role, we share messages and evidence of our impact to our partners, community and government. This is based on our deep domain knowledge and high ethical standards combined with our scientists' reputations for world-class pioneering research (read more on page 42). A focus on national challenges is fundamental to ensure Australians understand and support what we do.



Internal trends influencing our strategy

THE TREND

CSIRO's role in solving national challenges

As the nation's science agency, our purpose is to solve the greatest challenges through innovative science and technology. It's a purpose that's endured for more than 100 years and will continue to guide us into the future.

Shifting research methods

Research methods are evolving rapidly, providing opportunities to address previously intractable science questions by bringing together cross-disciplinary capabilities.

Future of work

Society is fundamentally transforming the way it works. Automation and 'thinking machines' are replacing human tasks, changing the skills that organisations are looking for in their people. Competition for the right talent is fierce. And 'talent' no longer means the same as 10 years ago – many of the roles, skills and job titles of tomorrow are unknown to us today²¹.

Health, safety and wellbeing

CSIRO workplaces include chemical and engineering facilities, laboratories, pilot plants, glasshouses, animal and field stations, and offices. Our people also work away from base in a variety of hazardous environments including mine sites, oil rigs, farms, forests, mountains, deserts and water bodies. Climate events, bushfires and pandemics add to the operational risks.

With diverse operations both overseas and in Australia, we continue to be ever vigilant in protecting the wellbeing of our people, partners, and the community.

Infrastructure and property footprint

In 2000, we operated from more than 76 research facilities and sites across metropolitan and regional areas of Australia. This has been reduced to 55 sites in Australia and three sites overseas. We also have a presence in 26 other locations which include monitoring stations, testing racks and hosted occupancies. We aim to further consolidate our sites to support a more sustainable property footprint and provide a vibrant workplace for our people, customers and collaborators. We also aim to build agility to manage risks and disruptions, such as COVID-19, while prioritising the wellbeing of our people.

THE IMPACT

Our endurance in delivering national impact is our ability to adapt and meet – head on – the changes that our environment, our society and our economy undergo. We regularly review our research portfolio, rationalise programs and create greater economies of scale by working closely with collaborators across the innovation system. This is particularly important in the short-term as the recent global economic downturn may lead to investment in research and development being deprioritised as government and industry seek to stabilise budgets.

Digital capabilities, such as artificial intelligence, are allowing the analysis of vast amounts of data to spot patterns, detect anomalies and derive useful insights in efficient ways. Non-classical-quantum sciences are revealing fresh insights into physical processes. There is also an increasing move to multi- and interdisciplinary science and technology, including the importance of the humanities and social sciences.

These momentous changes raise huge organisational, talent and human resources shifts. Adaptability – in organisations, individuals, and society – will be essential for navigating the changes ahead. Businesses will have to ease the routes to training and retraining and encourage and incentivise adaptability and the critical skills of leadership, creativity, and innovation.

Our widely varied safety risk profile adds complexity to our commitment to providing the safest work environment for our people. In 2020–21, our safety performance on Total Recordable Injury Frequency Rate was 4.3, an improvement over the previous year of 6.2.* Our Comcare claims declined to 25 in 2020–21, compared to 28 in 2019–20. We aspire to zero harm at work and our safety performance has room for improvement.

Our dispersed property footprint, infrastructure and work environment need to align better with our future science and workforce needs, which will be digitally driven, agile and adaptable. With the increased virtualisation of work and more of our people working remotely, we expect our infrastructure will shift to enable and promote more virtual sites.

CSIRO'S RESPONSE

We are solving Australia's greatest challenges through our science portfolio including missions – large-scale research initiatives aimed at driving breakthroughs with the engagement of the whole system – industry, government, universities and communities. Our strategic pillar Deliver real solutions from excellent science and technology focusses on customers' needs and embraces leading-edge digital and transformational approaches. Our strategic pillar Improve innovation from greater collaboration will bring networks of customers and partners together with science and infrastructure for deeper, impactful relationships to solve national challenges and build resilience for the future.

In this rapidly evolving environment, shaping a clear, long-term science and technology direction is critical for maintaining our competitive advantage. We are looking at our Digital Strategy and Future Science and Technology plan to identify key cross-cutting capabilities that will be critical to address the challenges and position Australia for a prosperous future. We are extending the application of our artificial intelligence to help us and our partners to create a national ecosystem and support the adoption of the technology across the economy.

Innovation comes from diversity in all its forms, and the changing nature of work provides a significant opportunity for us to rethink and redesign how our workforce is structured and enabled. We are developing and implementing comprehensive people and workforce strategies to address the dynamics of the changing workplace requirements to be a destination employer for world-class talent. We are also focussing on current and future capabilities, developing a more agile and adaptable workforce, delivering a great people experience, and caring for each other. Our 'CSIRO way of working' approach will provide further support to amplify performance from our service delivery models (read more on page 33).

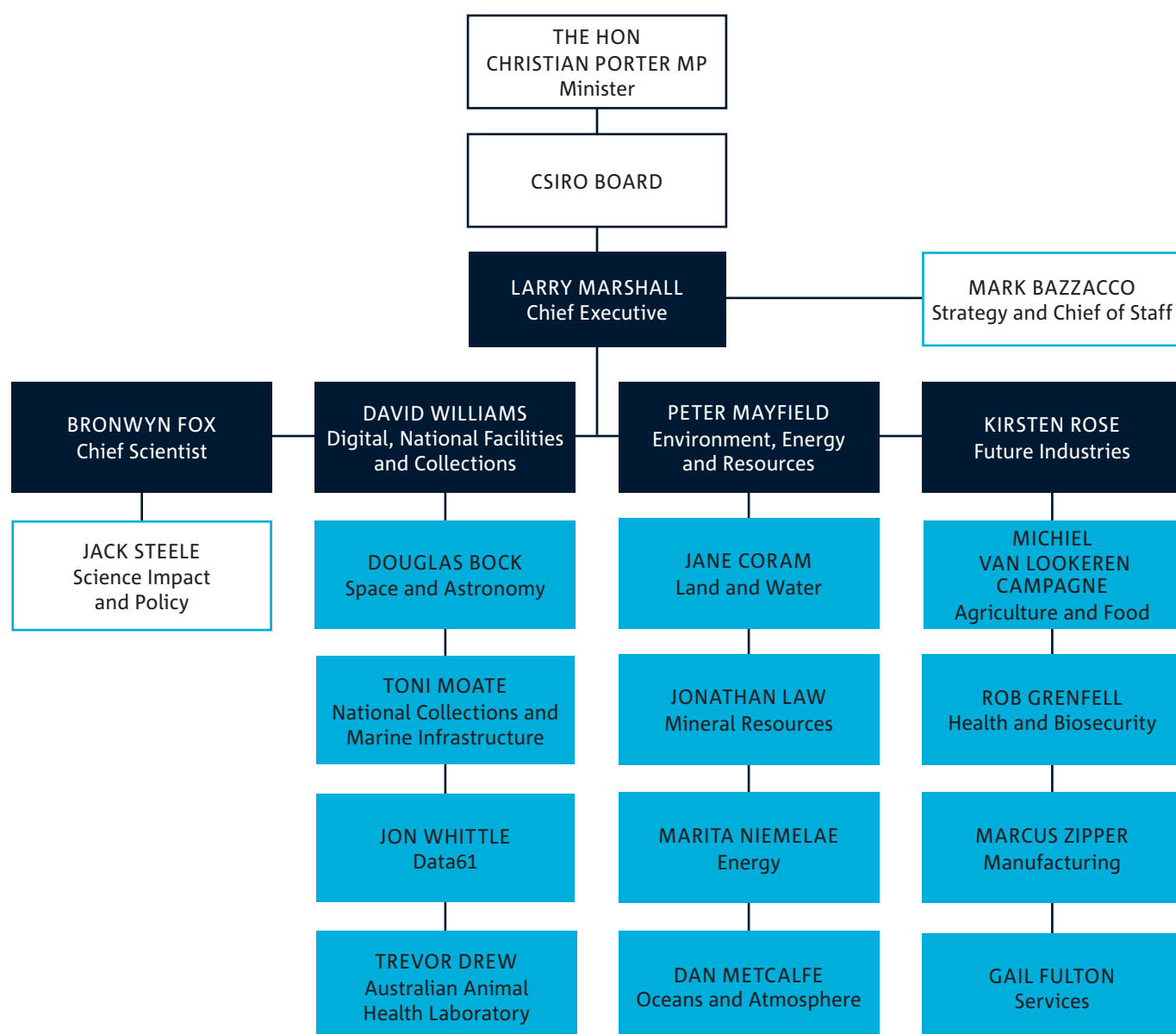
With a strong focus on the wellbeing of our people, we have a Health, Safety and Environment (HSE) strategy with five focus areas – a single HSE enterprise system, leadership and management capability, a proactive risk management culture, health and wellbeing, and environmental management. In conjunction with our culture program of work, we will improve our safety maturity, wellbeing and the morale of our people (read more on page 33).

Our Property Strategy and the New Ways of Working program are reviewing our future workplace needs, property, infrastructure, and safety requirements. Through our Labs of the Future, we are developing plans to establish digitised laboratories, flexible workspaces, a smaller, more sustainable footprint, cutting-edge, smart infrastructure shared with partners, and an efficient carbon footprint.

*In 2019–20, there was a revision of the Rolling Medical Treatment Injury Frequency Rate definition, which resulted in a correction of the Total Recordable Injury Frequency rate from 11.3 to 6.2.

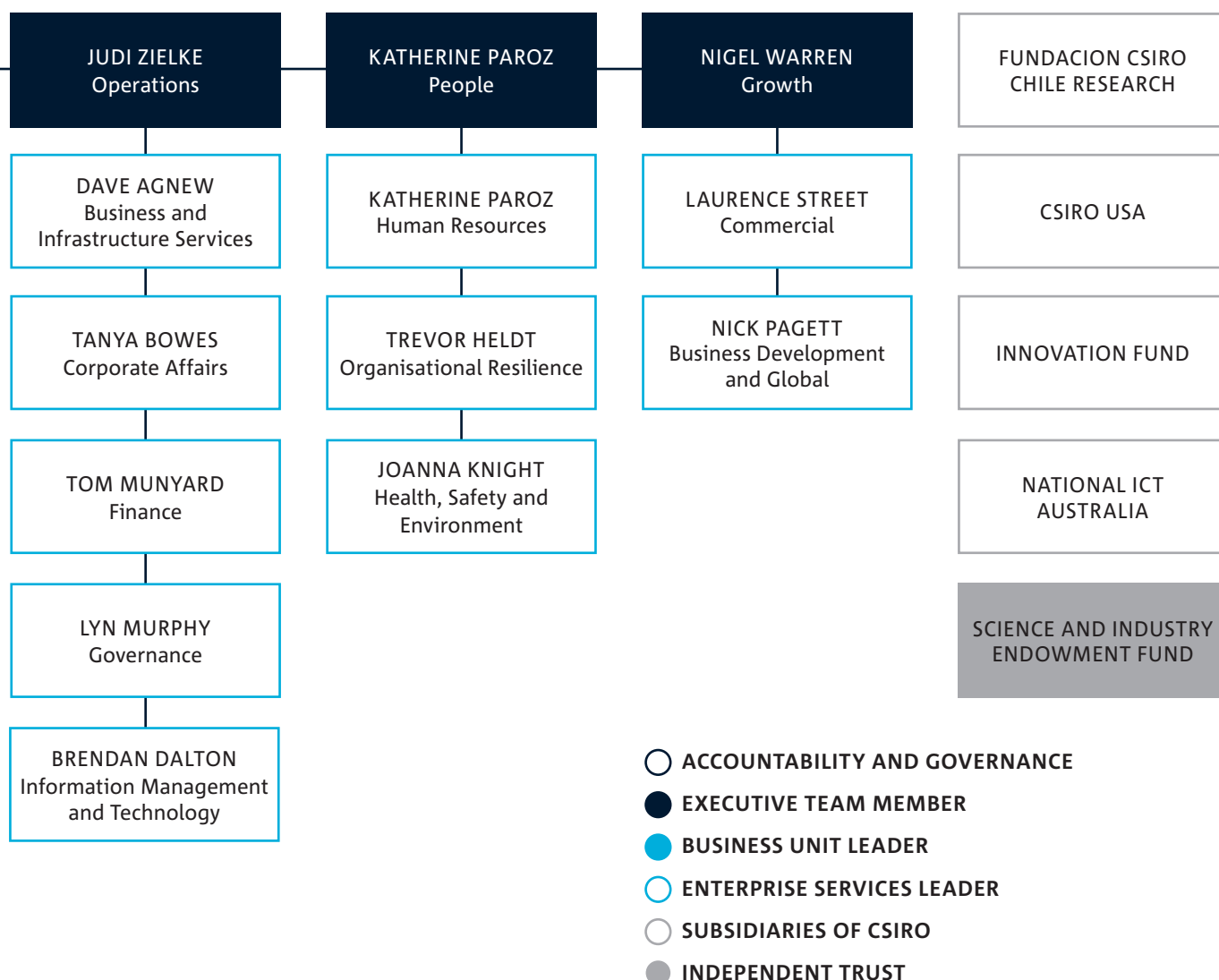
3.2 Our organisational structure and subsidiaries

Our organisational structure



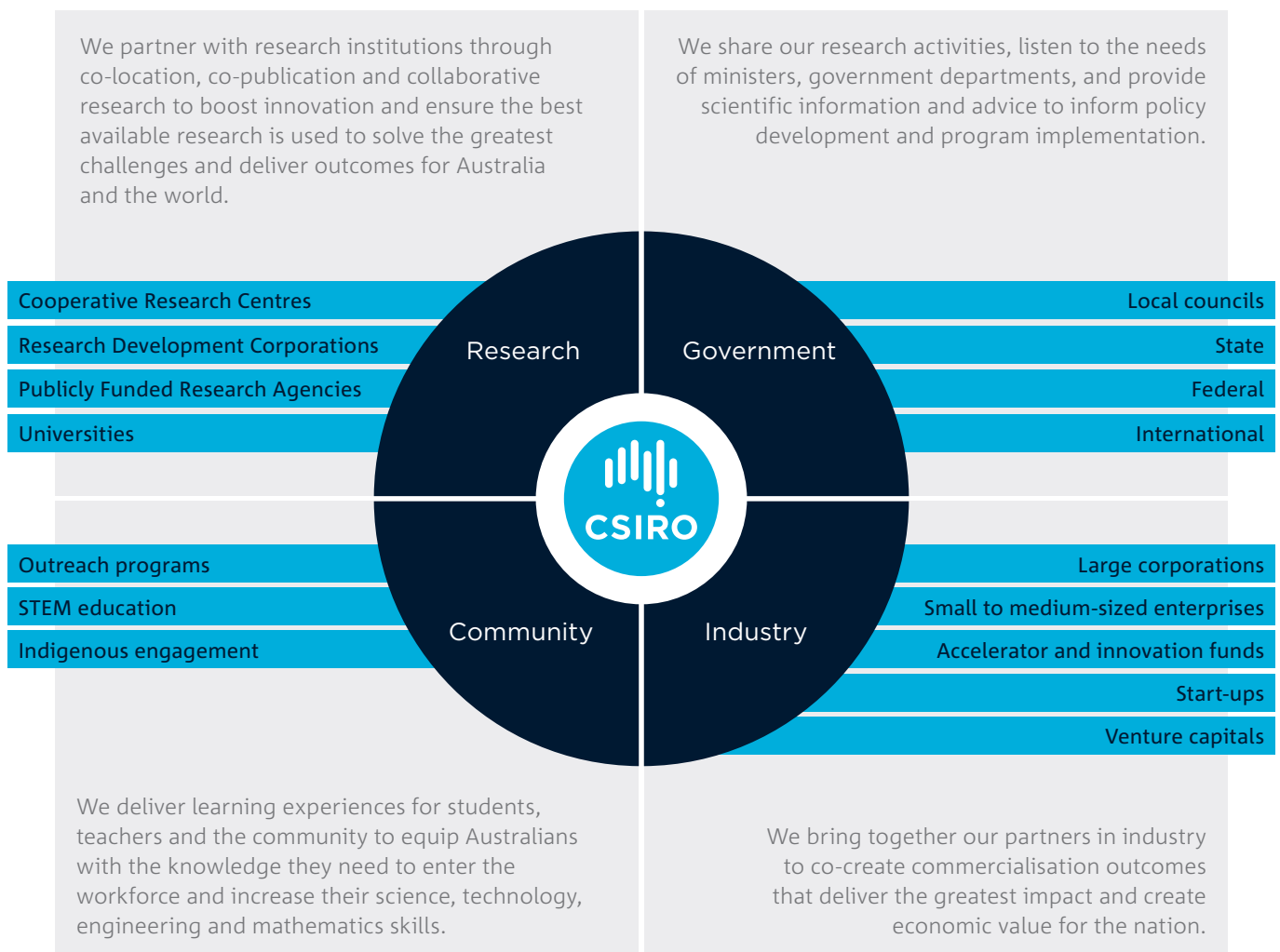
For information about our Business Units, Services, and national research infrastructure, see objectives 1, 2 and 3 on pages 40, 44 and 46. Our enterprise support functions provide advice and support across the Operations, People and Growth areas (see our capabilities on pages 32–33).

Our subsidiaries play a critical part in our ability to achieve our purpose. We have offshore representation that supports our global engagement, and funds that invest in science areas that create new opportunities for Australian innovation. Find out more about these on pages 46–47.



3.3 Innovation through collaboration

We can only continue delivering on our purpose if we collaborate and cooperate with our partners. That's why we work with Australian and international universities, governments, and industries, and with businesses of all sizes. The diversity of our collaborators drives our innovation, from strategic advisory and planning, to research and development, to programs and funding.





Enhancing our biocollections through digitisation

Australia is home to more than half a million species of plants and animals. Three-quarters of these found are nowhere else on Earth, however only 30 per cent have been discovered, documented and named. This unique biodiversity is a national treasure and a crucial environmental asset, providing ecosystem services and economically valuable resources.

The National Research Collections Australia is Australia's most reliable set of nationally representative biological collections. It underpins research in agriculture, biosecurity, biodiversity and climate change while continuing the traditional role of biological collections: identifying what species exist and where. These invaluable assets are used by researchers from all over the world.

We have initiated the Canberra Collections Accommodation Project to provide fit-for-purpose facilities for our biological collections. The project will enhance its digitisation and genomics research as well as the traditional studies of Australia's biodiversity to address some of Australia's greatest challenges, including:

- resilient and valuable environments through new insights into our unique biodiversity
- a secure Australia and region through improved identification of biosecurity threats
- food security and quality through identification of new food sources and insect pest identification.

3.4 Risk management framework

Our risk appetite and critical risks

Identifying and managing risks is central to solving the greatest challenges through science and technology. We acknowledge that breakthrough science, innovation and collaboration carry the risk of a technical or

scientific failure, however, we are committed to managing those risks and mitigating their consequences in a considered and effective way.

KEY RISK	RISK TOLERANCE
<p>Failing to maintain a safe and secure operating environment through managing:</p> <ul style="list-style-type: none"> • health, safety and environment (HSE) • physical, protective and cyber security • biosecurity and safety. 	<p>Recognising the inherently high consequences of risks associated with safety and security and given the nature of activities necessary to undertake our science, we have low tolerance for:</p> <ul style="list-style-type: none"> • actions and behaviours that endanger and undermine our people's wellbeing and workplace safety, including inaction on unacceptable HSE risks, even if the required action impacts project timeframes, cost or customer expectation • actions and behaviours that endanger and undermine physical, protective or cyber security
<p>Failing to conduct our science and business activities with integrity and in a manner that upholds our Code of Conduct.</p>	<p>We empower and trust our people to act autonomously balanced with a commensurate level of accountability. However, we have low tolerance for:</p> <ul style="list-style-type: none"> • deliberate or reckless breaches of our legal, regulatory, professional standards, research or ethics, bribery or fraud in the pursuit of our objectives • behaviours that place the integrity of our science and commercial dealings at risk.
<p>Failing to prioritise our science and investments in capability and scientific infrastructure which will deliver the greatest impact in a dynamic global and national context.</p>	<p>Solving the greatest challenges through innovative science and technology requires breakthrough science, innovation and collaboration. We have a consistent, organisation-wide approach to planning research and managing our impact, which promotes understanding and demonstration of our real-world value and allows us to have a greater tolerance for scientific and technical risks.</p> <p>To maximise our success, we have a low tolerance for strategic and operational risks that compromise our planning and objective setting processes that fail to support effective delivery to customers and that allow our culture and business model to be misaligned to our strategy.</p>
<p>Failing to develop and adopt strategies necessary to ensure the fundamental enabling elements of the organisation are optimised to successfully achieve relevance and impact:</p> <ul style="list-style-type: none"> • culture • business model • talent • financial sustainability • governance, business processes and systems. 	<p>Whilst we strive to achieve long-term financial sustainability and growth, we have a moderate tolerance for:</p> <ul style="list-style-type: none"> • short-term financial loss where aligned to the pursuit of our innovation agenda providing there is a balanced set of controls in place to manage the risk to an acceptable level. <p>However, we have low tolerance for:</p> <ul style="list-style-type: none"> • the ineffective, inefficient, uneconomical or unethical use of the resources entrusted to the organisation by government and other funders • compromising processes that support good governance and efficient use of organisational resources.

We recognise that to achieve our purpose we must be prepared to take measured and managed risks, however we have low to no tolerance of actions and behaviours that undermine the safety and security of our people, the integrity of our science and the protection of our environment.

Our most critical strategic and operational risks are summarised in the table below. These risks, along with significant immediate and emerging risks and issues are regularly reported and discussed at the executive level and within Business Units and functional areas.

HOW WE MANAGE RISKS

This risk is managed through controls and mitigation strategies that include:

- an organisational HSE plan 2020–24 and articulated values necessary to maintain a safe operating environment
- a safety culture program including HS-Me Day, leader training and all staff training
- an extensive array of existing controls at the Business Unit and activity levels
- enhanced and modified controls and activities to support health and wellbeing in light of COVID-19
- ongoing monitoring of the Enterprise Security Program to increase compliance with the Protective Security Policy Framework.

Scientific integrity is underpinned by extensive controls including peer review of science, ethics and publication approvals. The conduct of our business operations is subject to the application of our governance and accountability frameworks and mechanisms. The policies, processes and systems underpinning these are subject to regular internal and external reviews.

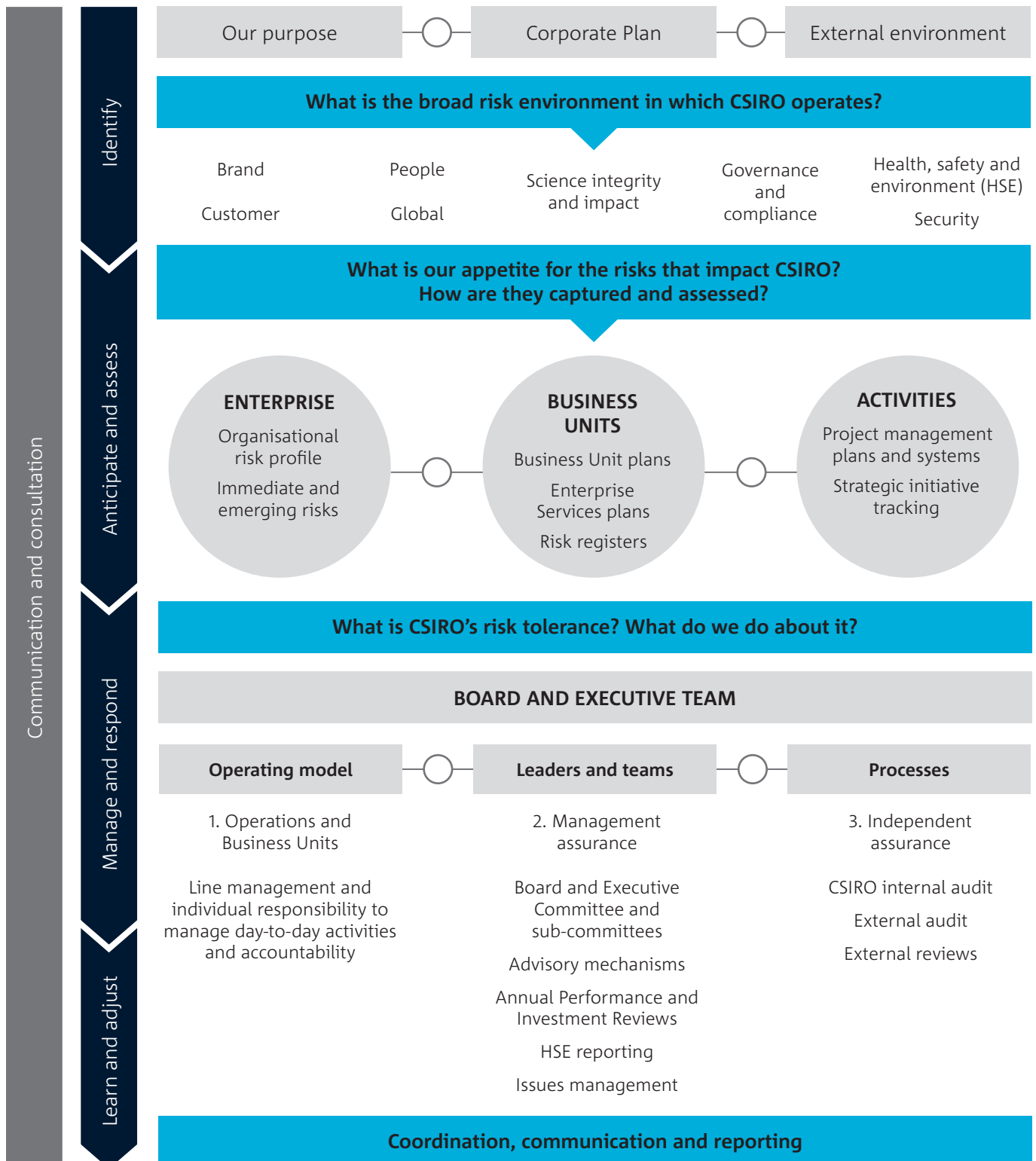
This risk is managed through controls and mitigation strategies that include:

- sharpening our strategic direction and collaborative efforts on the most important challenges for Australia
- reviewing and updating our strategic direction, supporting our investment decision-making criteria and process and updating our operating model
- developing our Future Science and Technology plan to focus our investments on transformative, cross-cutting future science and laboratories to address multiple challenges and create sustainable new industries
- using our Planning and Performance Framework to measure our achievements and outcomes
- applying our Governance and Policy Framework, especially in managing activities in contentious areas, to help us achieve our outcomes.

This risk is managed through a range of organisational initiatives that are focused on:

- people development and culture change programs supporting change in the way we collaborate, communicate and deliver impact through science
- additional resources to strengthen existing governance arrangements including establishing a Policy and Compliance function
- developing and executing medium and long-term strategies to adjust our business model and underlying policies, processes and practices to facilitate new initiatives
- in the context of COVID-19, realigning budgets and establishing customer retention and at-scale growth programs which, combined with additional Commonwealth funding support, have mitigated the financial impact of the pandemic
- specific Executive Team endorsed strategies and initiatives to support long-term financial sustainability and the evolution of our property portfolio.

How we manage risks



Reviewing and improving our risk management

Identifying and managing risks is central to delivering our purpose and – in turn – maximising the impact of our science and benefit to Australia. This includes understanding risks associated with the conduct and translation of research to outcomes and impact, people and culture, financial, customers and markets, health and safety, security, environmental, governance and integrity risks. By actively identifying and managing strategic, operational and external risks, we aim to increase our effectiveness as an organisation and provide greater certainty and confidence for the Government, our people, collaborators and other stakeholders in the community about our operations.

Risk framework

Our risk framework, methodology and approach are grounded in and aligned with both the international standard AS/NZS ISO 31000 Risk Management Principles and Guidelines and Commonwealth Risk Management Policy. Our risk framework is applied at the enterprise, Business Unit and activity levels as illustrated left.

Risk committees

The CSIRO Board is also active in supporting our efforts to identify and manage our risks through three Board standing committees:

1. People and Safety Committee assists the Board to fulfil its governance responsibilities in relation to organisational development, people-related activities, and health and safety.
2. Audit and Risk Committee assists the Board in the areas of financial management, risk management internal control, and compliance.
3. Science Excellence Committee assists the Board to endorse, oversee, and monitor the implementation of our strategic plans with respect to maintaining and growing our scientific excellence, its connection to delivering impact, and our role as innovation catalyst in the national innovation system.

Risk culture and capability

We continue to develop a culture and increasing organisational risk maturity in a way that supports taking risks where this is done mindfully, within organisational tolerances and is managed effectively.

Integration

Risk is aligned with key processes to enable decision-making. We continue to strengthen that alignment by increasing risk capability applied to each element of our strategic planning and execution framework.

We are providing scientific advice to the Norfolk Island community, regional council and emergency managers to help them make decisions on how to further their water resilience under a changing climate and projected extended dry spells.



04

Capability

Our capabilities help us to deliver our key activities and achieve our purpose.



4.1 Our people

Our extraordinary people are critical to our success and bring our excellent science to life. We have people working across the entire spectrum of research, science, engineering, commercialisation and enterprise services.

Our average staffing level is anticipated to remain within a narrow variation range over the strategy period. Based on indefinite, term, and casual employees, at 30 June 2021 we had 5,221 staff, a full-time equivalent of 4,949. Of these 3,237 (full-time equivalent of 3,067) or 62 per cent, were classified within the research function. We also draw upon support from affiliates (approximately 2,500 each year) such as fellows, distinguished visitors, students, contractors and others who help to progress our science.

































AVERAGE STAFFING LEVELS	2018-19	2019-20	2020-21	2021-22
Total average staffing levels full-time equivalent	5,239	5,193	4,907	5,414






Dr Warish Ahmed uses digital polymerase chain reaction techniques in our Brisbane laboratory to quantify genetic fragments of the COVID-19 virus in sewage. This provides an early detection tool to help public health management during the pandemic. Our research has found wastewater samples can pick up signals of the virus in sewage up to three weeks before the first reported COVID-19 cases through individual screening.

4.2 Investment in future capability

Over the next four years, we will invest in our people, infrastructure and data capabilities and build on existing activities that underpin our objectives and purpose.

FOCUS AREAS	KEY ACTIVITIES	2021–22	2022–23	2023–24	2024–25
Portfolio shifts	1. Future Science Platforms (FSPs): Support the reinvention and creation of industries through a focussed investment in cutting-edge sciences. This year, we will establish new FSPs in microbiomes and quantum.				
Smart infrastructure	2. Next generation national labs: Execute our site property and infrastructure initiatives to provide more sustainable and smarter national laboratories for the research ecosystem by developing new facilities at Westmead and Aerotropolis, digitising our Canberra based National Research Collections and consolidating sites.				
	3. Digital transformation: Execute our digital transformation across people, science and infrastructure to optimise and revolutionise the process of our science, enhance our services and deliver new value from digital innovation.				
Accelerating translation	4. Commercialisation pathways: Expand the use of different routes to market for new and improved products, services and processes by collaborating and co-creating with industry, investors and universities.				
Thriving culture and teams	5. CSIRO ways of working: Design and develop ways of working to drive stronger performance and deliver on our strategy. This includes key organisational processes from operationalising portfolio management to extended agility of our operating model.				
Future workforce	6. World-class talent: Create a differentiated workplace that enables our people to perform at their best and develop their careers. Develop talent for the innovation system including a suite of programs to grow Australia's pipeline of STEM talent and become a destination employer.				
Culture and wellbeing	7. CSIRO culture program: Implement a targeted program of people engagement, diversity and inclusion, and leadership development initiatives, including embedding our values as the foundation for how we work together at CSIRO.				
	8. Safety and wellbeing: Build our safety maturity and supporting processes, systems and frameworks in support of zero harm to our people and partners.				

 Planning
  Implementation
  Continuous improvement

Our Parkes radio telescope, part of the Australia Telescope National Facility, has been given a name chosen by local Wiradjuri Elders: Murriyang. In the Wiradjuri Dreaming, Biyaami (Baiaame) is a prominent creator spirit and is represented in the sky by the stars which also portray the Orion constellation. Murriyang represents the skyworld where Biyaami lives.



05

How we measure success



As per our Portfolio Budget Statement 2021–22, our outcome is *innovative scientific and technology solutions to national challenges and opportunities to benefit industry, the environment and the community, through scientific research and capability development, services and advice*. We actively review and monitor our performance including the use of performance measures as part of our performance framework.

OBJECTIVE 1

Conduct and encourage the translation of Australia's world-class scientific research into impact

OBJECTIVE 2

Create and manage Australia's national laboratories

OBJECTIVE 3

Stimulate innovation for Australian industry, academia and government

Enabling capabilities

HOW WE DELIVER ON OUR PURPOSE AND METRICS

Delivering benefits to Australia

Demonstrated value of benefits underpinned by an increasing annual portfolio of externally validated impact case studies capturing triple bottom line impacts

Ensuring customer satisfaction

Customer Net Promoter Score (NPS) maintained with increased survey sample

Disseminating excellent science

Normalised Citation Index (NCI)

Industry is adopting our solutions

Mixed methods quantitative assessment of equity portfolio; 3-year rolling average of revenue from intellectual property (i.e. royalties, licensing); spin-out companies established, and the creation of new SMEs facilitated

Being Australia's trusted advisor

Business Sentiment Survey: awareness of potential to work directly with CSIRO and knowledge of CSIRO

Enabling the use of science infrastructure and collections

Facilities and collections achieve a threshold rate of successful usage, with lost time minimised

Building strong, collaborative relationships

Demonstrated evidence from the value created from deep R&D collaborative relationships with mixed methods including joint publication, formal partnerships and qualitative assessment

Collaborating internationally for national benefit

Demonstrated by an increasing annual portfolio of impact case studies on global activities, with specific assessment of the value created and national benefit

Investing in national challenges

SIEF invests in programs aligned with published strategic objectives that address national challenges and contribute to Australia's sustainable future

Ensuring staff safety and wellbeing

Staff Survey: staff wellbeing responses

Hazard reporting (number of hazards recorded by staff in the health, safety and environment system)

Enhancing our positive culture

Staff Survey: Sustainable Engagement Score

Diversity in leadership: proportion of female leaders (as defined by organisation role)

2021–22 TARGET	2022–23 TARGET	2023–24 TARGET	2024–25 TARGET
Evidence of maintained or increased impact	Evidence of maintained or increased impact	Evidence of maintained or increased impact	Evidence of maintained or increased impact
NPS +40	NPS +40	NPS +40	NPS +40
NCI 1.5	NCI 1.5	NCI 1.5	NCI 1.5
Maintain or increase performance across each method	Maintain or increase performance across each method	Maintain or increase performance across each method	Maintain or increase performance across each method
Increase year-on-year	Increase year-on-year	Increase year-on-year	Increase year-on-year
Achieve or exceed usage rates	Achieve or exceed usage rates	Achieve or exceed usage rates	Achieve or exceed usage rates
Maintain or increase the value created using mixed methods	Maintain or increase the value created using mixed methods	Maintain or increase the value created using mixed methods	Maintain or increase the value created using mixed methods
Evidence of national benefit demonstrated (three case studies)	Evidence of national benefit demonstrated (four case studies)	Evidence of national benefit demonstrated (five case studies)	Evidence of national benefit demonstrated (six case studies)
Evidence by an impact case study or evaluation for each active SIEF program	Evidence by an impact case study or evaluation for each active SIEF program	Evidence by an impact case study or evaluation for each active SIEF program	Evidence by an impact case study or evaluation for each active SIEF program
72% 1,440 reports	73% 1,800 reports	74% 1,800 reports	75% 1,800 reports
81% 37%	82% 37%	82% 38%	84% 38%

It's an industry with legs! In 2021, we launched Australia's first edible insects roadmap. It paves the way for Australia to become a player in the billion-dollar global edible insect industry by producing nutritious, sustainable and ethical products to support global food security.



06

Objectives and strategic focus areas

Our objectives help us deliver on our purpose and respond to the internal and external environment. They include our key activities that will help us achieve our strategic direction for the next four years and move us closer to our vision aspirations.



Objective 1

Conduct and encourage the translation of Australia's world-class scientific research into impact

Outcome: Deliver impactful solutions at-scale through leading science and technology, collaborative relationships and differentiated capability.

We deliver on this objective primarily through our Business Units, Missions and Future Science Platforms.

Business Units

- Agriculture and Food
- Australian Animal Health Laboratory
- Data61
- Energy
- Health and Biosecurity
- Land and Water
- Manufacturing
- Mineral Resources
- National Collections and Marine Infrastructure
- Oceans and Atmosphere
- Services
- Space and Astronomy

Missions

- Drought Resilience
- Future Protein
- Hydrogen Industry
- Trusted Agrifood Exports

Future Science Platforms

- Artificial Intelligence and Machine Learning
- Autonomous Sensors
- Collaborative Intelligence
- Deep Earth Imaging
- Digiscape
- Environomics
- Hydrogen Energy Systems
- Microbiomes
- Precision Health
- Quantum Technology
- Responsible Innovation
- Space Technology
- Synthetic Biology
- Valuing Sustainability






































The CSIRO BioFoundry is a state-of-the-art facility that lets scientists rapidly design, build and test new biotechnologies at a scale that wasn't possible before. Enabled by technological advancement in robotics, data handling, sensors and automation, the CSIRO BioFoundry can quickly prototype new biotechnologies or answer complex biological questions. As part of the Synthetic Biology Future Science Platform, CSIRO's BioFoundry is helping develop sustainable and effective solutions to environmental, health and industry challenges.

Strategic focus areas for 2021-25:

- optimising our investments through a series of portfolio shifts and conducting complex multidisciplinary and digitally enabled research to solve tomorrow's challenges
- shifting our operating models to support larger-scale challenges and missions
- investing more in digital transformative and cross cutting science to stimulate research and innovation across the system.
- delivering a customer experience journey across each of our key sectors that engages and retains stakeholders aligned to our path to impact.

Key activities: how we will achieve our strategic aspirations

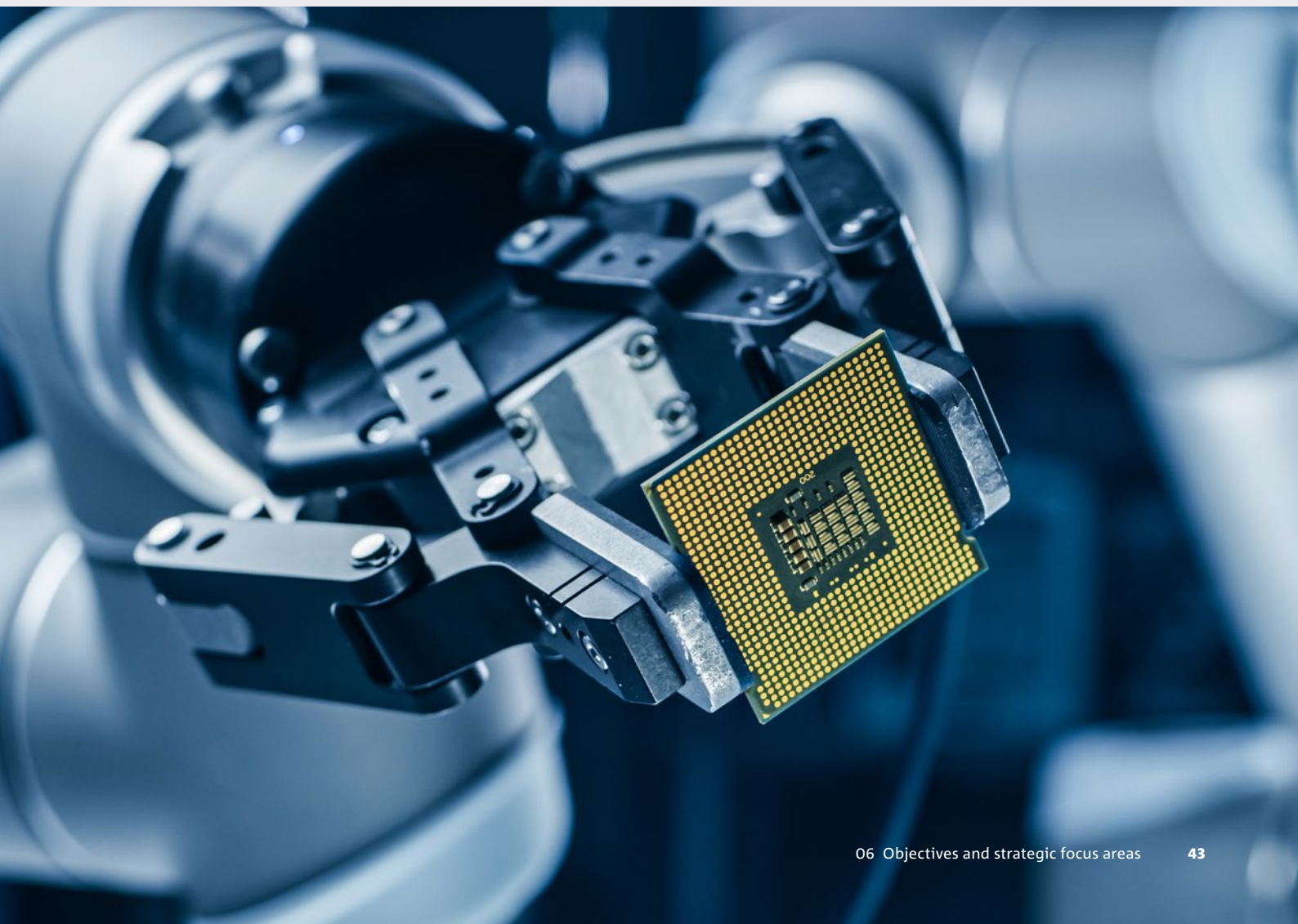
FOCUS AREAS	KEY ACTIVITIES	2021–22	2022–23	2023–24	2024–25
Portfolio shifts	1. Future manufacturing: Build on our advanced manufacturing capability to develop and apply next generation commercially viable and scalable solutions in agile and digital manufacturing.				
	2. Energy transformation for Australia: Develop capability and paths to market for applied research and development to enable and accelerate the transition of the electricity system to a stable, integrated, highly efficient, lowest cost and low emissions future state.				
	3. Artificial intelligence for the system: Amplify our leading applied AI capability for CSIRO science and external partnerships, including delivering the Government's National Artificial Intelligence Centre and the next Generation Graduates program to create a national ecosystem for applied AI to assist in delivering Australia's Digital Economy Strategy.				
	4. Pandemic preparedness and resilience: Focus and direct our research portfolio strategy to further enhance Australia's disease preparedness against present and emerging infectious diseases, expanding zoonotic work and integrating capability across our broader health offering at the nexus of human-animal-environment. This includes expanded laboratory capacity and capability at the Australian Centre for Disease Preparedness to support national sovereign capability.				
	5. Natural disaster and resilience: Shape, integrate and align our climate and adaptation research portfolio strategy to further focus our offering and services that build climate and nature disaster resilience.				
	6. Missions portfolio: Operationalise our portfolio of four new missions (Drought resilience, Future protein, Trusted Agrifood Exports, Hydrogen Industry) and launch the next cohort of missions with partners and investors in support of key national priorities.				
Portfolio management	7. Enhanced portfolio management for greater impact: Affirm and operationalise our decadal science portfolio informed by market insights and megatrends analysis and delivered through investments in a one-CSIRO portfolio to achieve greater impact for the nation.				
	8. Our customer experience: Strengthen our customer and collaborative partnerships, and advance our customer experience journey with improvements across our customer programs and processes to support key industry sectors, including our engagement with high-growth small to medium-sized enterprises.				
 Planning  Implementation  Continuous improvement					

The AI revolution is not on the horizon — it's already here

Digital innovation including AI and other technologies can deliver \$315 billion in gross economic value to Australia over the next decade with a significant opportunity to boost productivity and improve the national economy through its strong potential to enable industry to make better products, deliver better services, faster, cheaper and safer.

We have been acting as a network and partner with government, industry, and universities, to advance the technologies of AI in many areas of society and industry. Over the next four years, we will be investing over

\$100 million in five science and technology areas, one being AI, to support the nation's recovery from COVID-19 and build future resilience. A key aspect of this investment will be scaling up the application of our technology to support our portfolio of missions. We're also establishing National Artificial Intelligence Centre, to coordinate Australia's AI expertise and capabilities, and address barriers that businesses face in adopting and developing AI.



Objective 2

Create and manage Australia's national laboratories

Outcome: World-class laboratories and collections led and shared with the research community and the public to drive innovation.

We deliver on this objective primarily through our facilities and collections.

- **Australian Centre for Disease Preparedness**
- **Australia Telescope National Facility**
- **Marine National Facility**
- **Pawsey Supercomputing Centre**
- **National Research Collections Australia**
- **Atlas of Living Australia and associated bio-collections**



The Atlas of Living Australia provides access to Australia's largest collection of biodiversity information via the provision of open infrastructure and tools. After the bushfires in 2019–20, many people were keen to help measure the damage and monitor species recovery after fire. In response we built resources and tools to support and coordinate citizen scientists and help deliver research-ready data for bushfire science.

Strategic focus areas for 2021–25:

- delivering Australia Telescope National Facility leadership and operation of the Square Kilometre Array (SKA) in Australia, enhancing international partnerships and collaborations in space and astronomy to benefit Australia.

Key activities: how we will achieve our strategic aspirations

FOCUS AREAS	KEY ACTIVITIES	2021–22	2022–23	2023–24	2024–25
Accelerating translation	1. Square Kilometre Array: Deliver the operations under contract as the SKA site and operations entity in Australia including partnering with industry and science organisations.	●	●	●	●

● Planning

● Implementation

● Continuous improvement

Objective 3

Stimulate innovation for Australian industry, academia and government

Outcome: Increase the rate of research translation in the innovation system programs and through investments that create new ventures and other outcomes to deliver impact for the nation.

We deliver on this objective by developing strategic R&D partnerships, STEM capability and delivering excellent customer experiences to Australian industry, including SMEs and the universities.

- **Science and Industry Endowment Fund**
- **CSIRO Innovation Fund – managed by Main Sequence**
- **Services**
- **Fundacion CSIRO Chile research**
- **CSIRO USA**

The CSIRO Innovation Fund managed by Main Sequence and SIEF are independent from CSIRO.



We developed the phenoMobile® Lite to be a rugged, mobile, highly adaptable, and easy-to-use buggy for the non-destructive phenotyping of crops in the field. It helps researchers to rapidly screen field crops for traits such as crop height, fractional coverage and biomass index, saving time and money.

Strategic focus areas for 2021-25:

- optimise CSIRO as a trusted science and innovation advisor and partner to support the translation of science to solutions
- stimulate research, innovation, and entrepreneurship activity through collaboration and venture creation across the Australian innovation system
- supporting a portfolio of deep technology companies to stimulate research, innovation, and entrepreneurship across the Australian innovation system.

Key activities: how we will achieve our strategic aspirations

FOCUS AREAS	KEY ACTIVITIES	2021-22	2022-23	2023-24	2024-25
Accelerating translation	1. Commercialisation services for the system: Boost our suite of commercialisation capability and services, including the CSIRO Innovation Fund and accelerator programs, to help Australia's SMEs and universities fast-track their technology and ideas into the market at scale.	●	●	●	●
	2. Open access publications model: In collaboration with partners, drive the transformation of business models and practices that deliver sustainable open access to research publications, therefore increasing the availability and impact of our science.	●	●	●	●

● Planning ● Implementation ● Continuous improvement

Our Research Vessel, *Investigator*, coming into berth
at our Marine Laboratories in Hobart.



06

Appendix



List of requirements index

The corporate plan has been prepared in accordance with the requirements of:

- subsection 35(1) of the PGPA Act
- the PGPA Rule 2014.

These are the required sections and the page reference(s) that show how our corporate plan meets these expectations.

REQUIREMENT	PAGE/S
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The reporting period for which the plan is prepared	2–3
The reporting periods covered by the plan	2–3
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**As Australia's national science
agency and innovation catalyst,
CSIRO is solving the greatest
challenges through innovative
science and technology.**

CSIRO. Unlocking a better future
for everyone.

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