www.csiro.au

Transforming challenges into Australia's opportunities

Corporate Plan 2017–18

OUR FUTURE SCIENCE PLATFORMS ARE AN INVESTMENT IN SCIENCE THAT UNDERPINS INNOVATION AND HAS THE POTENTIAL TO HELP REINVENT AND CREATE NEW INDUSTRIES FOR AUSTRALIA.

Solving national challenges to forge our bright future

A message from the Chief Executive

Our strategy was developed to tackle Australia's biggest opportunity: the gap between our world-class research and our growing industries. We are committed to doing this by strengthening our customer first approach, our role as a collaboration hub, delivering more breakthrough innovation and expanding our reach through a global outlook for national benefit. We took on new responsibilities, as brand new entities were created under the first major policy initiative of our new Prime Minister, the National Innovation and Science Agenda (NISA). Australia's digital powerhouse, Data61, has cemented its position as the leading authority on data, working closely with industry, universities and government to prepare our nation for the digital challenges and opportunities ahead.

ON, powered by CSIRO, is an innovation program designed to help Australia's publicly funded researchers and their industry partners translate great science in the lab to real world impact, at pace. In the past 18 months ON has graduated more than 130 teams whose sci-tech innovations will help address some of the global community's greatest economic, environmental and social challenges.

Growing application of our research and market interest is delivering increased collaboration where Australia has traditionally underperformed. Collaboration with universities also continues to grow through mentorship programs and Industrial PhDs, further developing our critical role in the innovation ecosystem. And our Innovation Fund[1], to be managed by a CSIRO subsidiary, Main Sequence Ventures, is poised to make its first investments to support start-ups and spin-outs, returning more benefits to Australia.

To boost the exposure of Australian innovation on the international stage, we announced our US office in Silicon Valley, supporting the Global Outlook for National Benefit pillar of our strategy. This will propel Australian science to the centre of the world's research and technology frontier, and open more doors for home grown research and industry to enter the dynamic US market.

Our research is guided by our science and market roadmaps, which give us clarity and insight into where science investment is likely to deliver the most impact. This applies equally to our commercial customers, to our research collaborators, and to our public good beneficiaries. Everything we do must pass the national benefit test – *if it doesn't benefit Australia, we don't do it*.

Setting the direction for our science brings all the pillars of our strategy together to create a virtuous circle: our customers reward the benefits we deliver, our collaboration partners want to work with us and not compete against us, we create breakthrough innovation through new value or new solutions with our science, and we see potential to scale up this benefit on the global stage, returning value back to Australia and Australian science, whether it delivers commercial returns or not.

Looking to the future, we've committed a tenfold increase in pure science with more than $40 million per year by 2020 in our Future Science Platforms. Investing in challenging and riskier science will ensure research continues to meet the needs of industry, community and the environment in a rapidly changing world, while creating unique opportunities for Australia to capitalise on its advantages. Our Future Science Platforms will also attract the next generation of researchers to work collaboratively and invent Australia's future.

But, it is our people who make all the difference and we continue to introduce initiatives that support our global science and research community. Commencing in March, our intensive CSIRO Connect workshops have engaged more than 700 leaders in strategic discussions to deepen connections within the organisation; we launched Balance, our flexible work program driving culture change; and we continue to strengthen our involvement with the SAGE (Science in Australia Gender Equity) initiative.

We will continue to listen, engage and act on the ideas and feedback of our people as we implement our strategy, drawing on their expertise, their experiences, and their passionate dedication to making life better for all Australians. Our people are not only essential to CSIRO's success, they are Australia's greatest asset.

I'm proud to say that the people who make CSIRO a national treasure have delivered all this – and far more. So with a broader role under the Government's major policy, NISA; a deeper reach with our global strategy; a honed focus through our roadmaps; a deeper investment in our future science; and the expertise of Australia's leading minds; CSIRO has never been better positioned to become Australia's innovation catalyst. We're firing on all cylinders and on a clear impact trajectory.

Dr Larry Marshall
Chief Executive

1 CSIRO Innovation Fund 1, LP

Our story

For over a century, we've been pushing the boundaries of what's possible in science and technology to solve Australia's biggest challenges and seize opportunities on the horizon.

Our more than 5,000 experts across 59 locations turn science into solutions, working in partnership with government, industry, universities and the community.

We are at the forefront of world-class science; we are embedded across our national research system and reaching out globally to extend the impact of Australian innovation and return benefits and value back home.

Our proud legacy invented fast WiFi, Aerogard and polymer banknotes – today we're finding the first gravitational waves in space, growing gluten-free grains, and pioneering new renewable energy sources, just to name a few.

We believe in the power of science to transform our lives and secure our futures – this plan shows how we'll continue to realise that ambition every day.

RESEARCH SCIENTISTS INSPECT A FIELD OF KEBARI™, AN ULTRA-LOW GLUTEN BARLEY GRAIN.

Our plan

The CSIRO Board, as the accountable authority of CSIRO, present the CSIRO Corporate Plan 2017–18 as required under paragraph 35(1)(b) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act). The Plan is prepared in accordance with the *Public Governance, Performance and Accountability Rule 2014*.

The Plan is prepared for the financial year 2017–18 and covers the reporting periods 2017–18 to 2020–21. It sets out the strategies CSIRO proposes to pursue to fulfil its purpose, the activities CSIRO proposes to carry out and how it will measure its performance, and the resources CSIRO proposes to allocate to these activities.

This Plan is our primary planning document. It sets out our priorities for the year ahead, outlines the resources and risks involved, and maps the path from the work we perform every day to fulfilling our mission to become Australia's innovation catalyst.

It forms the basis for reporting our success in our annual performance statements, and charts a course through to 2021.

Our strategy

Our Strategy 2020 recognises Australia's single biggest opportunity: the gap between research and industry. Our best ideas are being exported overseas, delivering benefit and economic returns elsewhere.

Australia needs an innovation catalyst to turn more of our world-class research into benefit for Australia – a role we are uniquely positioned to fill.

We will do this by strengthening our customer first approach, our role as a collaboration hub, delivering more breakthrough innovation and expanding our reach through a global outlook for national benefit.

Driving our success will be our enduring devotion to excellent science, a culture of inclusion, trust and respect, our dedication to health, safety and the environment, and continuing to deliver on commitments.

Our Corporate Plan at a glance

As our primary planning document, we use our Corporate Plan to define our external environment while aligning our strategic priorities, internal capabilities and activities, structure and governance that enable us to achieve our purpose. We also embed strong risk and performance frameworks in order to support and track our success.

Our purpose

Our purpose is to collaboratively address national priorities and assist industry by conducting and encouraging the uptake of world-class scientific research, managing research facilities on behalf of the nation, and mobilising and developing the next generation of scientists for the benefit of Australia.

Structure and governance

Environment

We operate in a complex and constantly evolving technological, political, economic, ecological and social environment.

Strategic priorities

- Customer first
- Collaboration hub
- Global outlook, national benefit
- Deliver on commitments
- Breakthrough innovation
- Excellent science
- Inclusion, trust and respect
- Health, safety and environment

Capabilities

- Excellent science
- Delivering on our commitments
- Culture
- Inclusion, trust and respect
- Health, safety and environment

Activities

- Mission-directed research and development
- Managing national research infrastructure
- Developing national science talent
- Enterprise Support Services

Risk and performance management

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CSIRO'S CRAIG JAMES OPERATES THE HELPER STATION UNIT OF THE ReMoTe SYSTEM; A HANDS FREE, WEARABLE, TECHNOLOGY THAT CONNECTS REMOTE EXPERTS WITH ON-SITE OPERATORS TO PROVIDE REAL-TIME ASSISTANCE WHEN PROBLEMS ARISE.

THE 19-BEAM RADIO RECEIVER DESIGNED AND BUILT BY OUR ASTRONOMY AND SPACE SCIENCE ENGINEERS IS TESTED IN MARSFIELD'S ANECHOIC CHAMBER. THE RECEIVER WILL FORM PART OF CHINA'S FIVE HUNDRED METRE APERTURE SPHERICAL TELESCOPE.

Our purpose

We're here to solve Australia's biggest challenges

We are an Australian Government statutory authority within the Industry, Innovation and Science Portfolio, operating under the provisions of the *Science and Industry Research Act 1949* (SIR Act).

Our purpose is to collaboratively address national priorities and assist industry by conducting and encouraging the uptake of world-class scientific research, managing research facilities on behalf of the nation, and mobilising and developing the next generation of scientists for the benefit of Australia.

We provide scientific solutions, information and advice through our research groups that operate on a large-scale and have a strong focus on identifying a clear path to adoption. Delivering real benefits in partnerships with Australian universities and publicly funded research institutions, the private sector, and selected international organisations.

Other key activities in education and outreach programs develop the next generation of STEM individuals, and increase the knowledge of science and its application in the Australian community. We support undergraduates, postgraduates and postdoctoral researchers to increase the calibre of researchers working in Australia.
We nurture innovation and entrepreneurship through investments in start-up and spin-off companies and support for existing SMEs engaged in translation of research.

We host national research infrastructure (the Australian Animal Health Laboratory, CSIRO Astronomy and Space Science and the National Collections and Marine Infrastructure) for the scientific community to assist with the delivery of research. These facilities and collections are available for use by the Australian and international research communities, and increasingly publicly accessible.

Fulfilling our purpose: Our impact framework

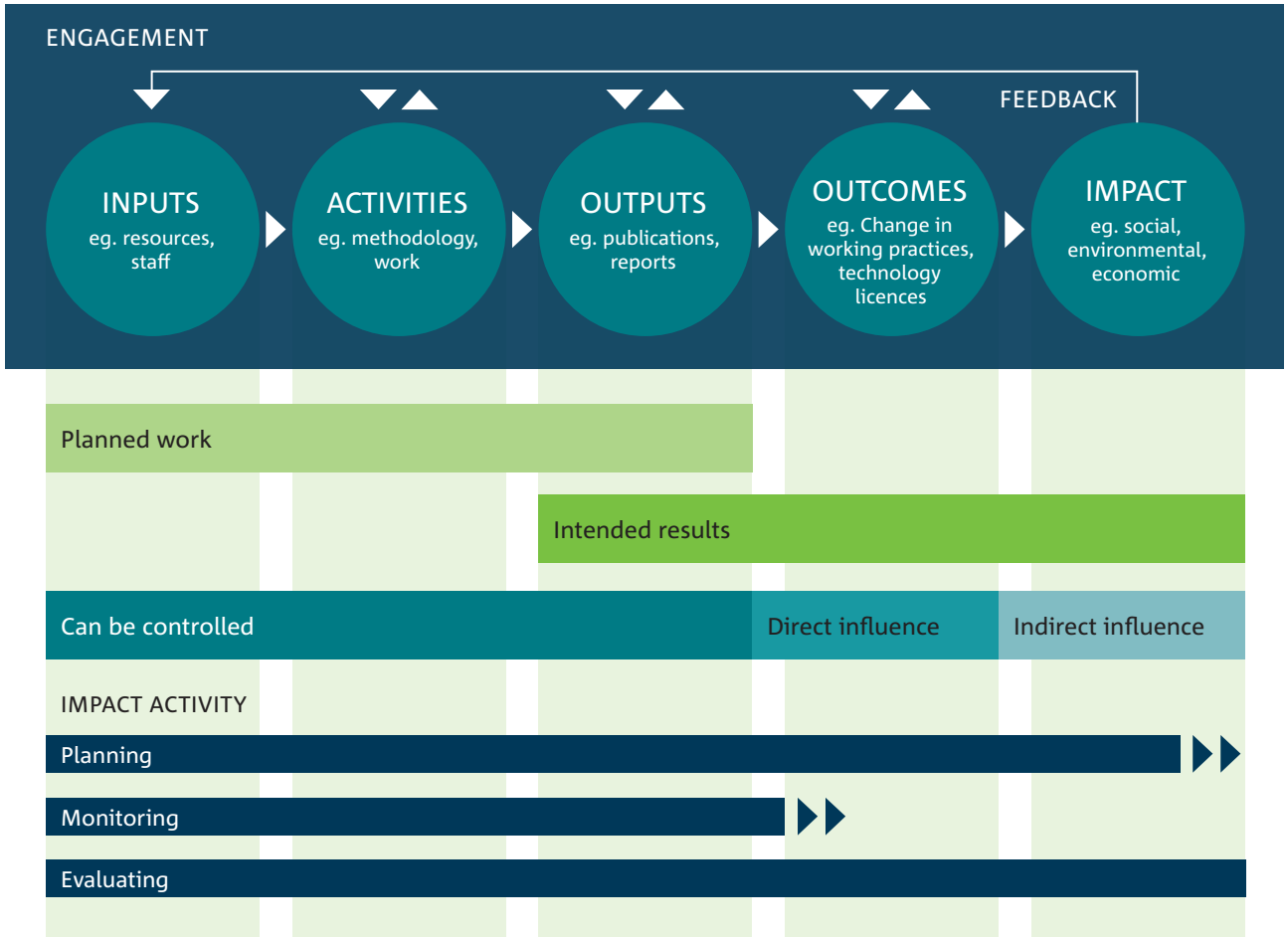
Since our inception, we have conducted research to address the scientific problems facing industry and the nation. If we are going to stay on the cutting edge and deliver solutions for real world problems, we need to bring impact thinking to everything we do.

Our impact framework[2] is employed across the organisation to consistently plan, monitor, evaluate and report the impact of our research, infrastructure and services. This allows for a more comprehensive view of the impact we deliver with our partners to the world.

Our approach allows us to improve:

- **Accountability** – the ability to provide defensible, robust evidence of impact.
- **Analysis** – the opportunity to better understand and maximise research impact.
- **Allocation** – to enable better informed resource decision making.
- **Advocacy** – an increased capacity to articulate future and delivered impact.

The framework strengthens the skills of our people to better manage their projects and work with others to guarantee uptake and adoption of their solutions – this takes perseverance and influence. Our approach to impact is adding to our strong reputation and role as an innovation catalyst and trusted advisor.



Impact Framework derived from the work of the *W.K. Kellogg Foundation*

2 To learn more about CSIRO's Impact Framework, please see: www.csiro.au/en/About/Our-impact

The impact framework, along with the defined market vision and roadmaps, underpins the way we analyse the needs of the nation, industry and markets. These processes focus the capability of the organisation to deploy action in accordance with the key strategic pillars. Our commitments are continually aligned through investment decisions which reinforce the objective to deliver impacts and meet, and even predict, customer and market needs. Effective planning is required to ensure efficient implementation, tracking and reporting of our performance.

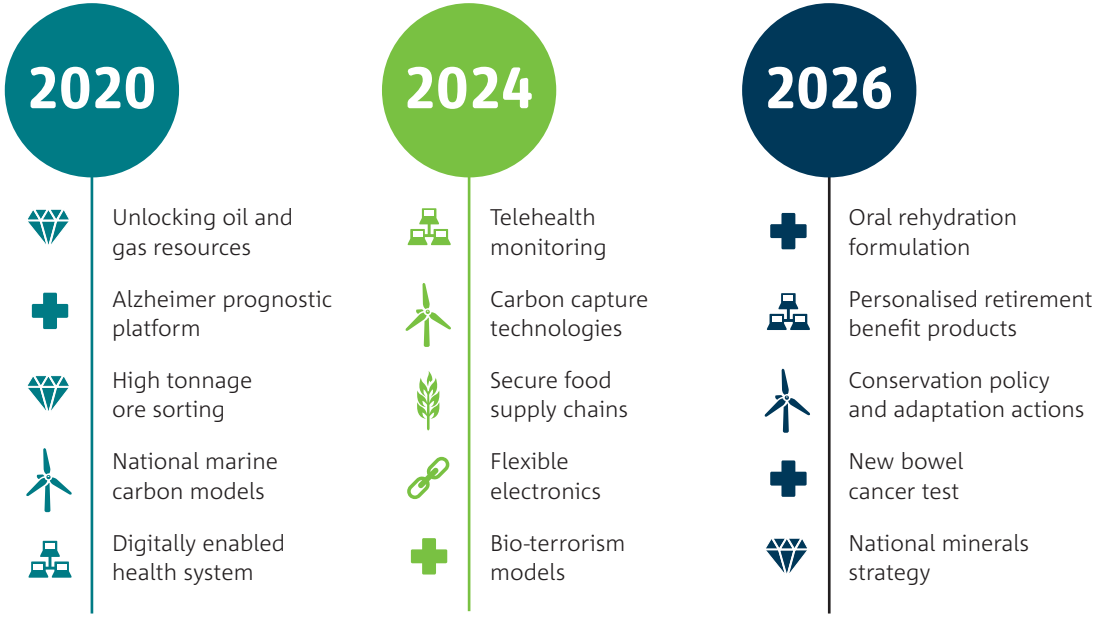
Our Business Units are the core vehicles for research impact delivery. They integrate all activities, from capability development, through to science delivery, and client and commercial engagement. Across the organisation, our Business Units prepare impact plans annually.

We have a well-developed process to plan, monitor and report our impacts. This includes:

- **Business Unit Reviews**: Every 3-4 years our Business Units are assessed by an external expert panel on their ability to provide evidence of planned and achieved impacts.
- **Impact Case Studies**[3]: A number of impact case studies, using the CSIRO Impact Evaluation Guide, are conducted on a cross-section of projects annually.
- **CSIRO's Value Report**[4]: Every two years we commission an assessment of our Return on Investment.

Our ability to plan, monitor and report our impact is world leading and so are the technologies we plan to deliver. The figure provided gives a snap shot of what research will be supplied with economic, environmental and social benefits to industry and the nation over the next decade.

Together, we innovate the future



3 Access to all CSIRO's impact case studies: www.csiro.au/en/About/Our-impact/Our-impact-in-action/Latest-impact-case-studies

4 CSIRO's Value Report 2017: www.csiro.au/en/About/Our-impact/Reporting-our-impact/Performance-reviews

Our operating environment

The challenges we're tackling

We operate in a complex and fluid national and global research environment. We play a vital role in addressing the economic, environmental and social challenges facing the nation.

We are an integrated, globally competitive, applied research organisation. However, the technological, political, economic, ecological and social disruptions of modern times require systematic, larger and deeper collaborative efforts than previously known. At the same time, major research infrastructure and facilities are beyond the capacity of a single entity to run, resulting in the rise of multi-national, multi-disciplinary research institutions collaboratively managing and co-investing in resources. These arrangements present opportunities to be more efficient, effective and sustainable.

Creating opportunities for commercialisation

We continue to focus on increasing collaboration with industry, universities, and other publicly funded research agencies to understand and address national and global challenges. Collaboration is not a function in isolation, nor is it mysterious or new – our teams collaborate in many ways on a daily basis and there are a range of models for collaboration in existence. Numerous international comparisons show that collaboration between industry and research institutions in Australia is poor, resulting in a research knowledge base that is not captured effectively. Each year Australia's publicly funded research sector spends over $10 billion on research and development. This spend creates an incredible national capacity for innovation. However, as referenced in the *Innovation & Science Australia 2016* report, more support is needed to convert our enviable pipeline of ideas into innovations that will benefit Australia and address major challenges. CSIRO has established an Innovation Fund[5] to invest in the development of early stage technology opportunities from the public research sector. This initiative is part of the Australian Government's National Innovation and Science Agenda (NISA). The Fund will commence operations in 2017–18.

Improving the translation of knowledge and ideas from the Australian research sector to outputs for the economy, environment and society requires greater levels of collaboration across Australia's innovation system than previously undertaken. We recognise this need, and we focus on acting as the national innovation catalyst. We have responded with the ON program, a national science and technology accelerator. ON provides the permission, support and connections for Australia's best researchers to step out of the lab, learn more about the challenge they aim to address, and determine the best pathway to impact. Our University Partnership Strategy also supports our role as the national innovation catalyst to increase innovation capacity across research and research training organisations, and developing a more vibrant and effective approach to infrastructure and co-location of activities.

Improving alignment

The Australian innovation system is increasingly distributed; comprised of universities, cooperative research centres, rural research and development centres, and a host of industry growth centres, research institutes, and other government and industry initiatives. We must identify and focus on a valuable and differentiated mission in Australia's innovation system, while at the same time improving the effectiveness of the system as a whole. We need to choose where we lead, and where we play a contribution and support role. Our success is defined by the impact we make.

We have identified six key emerging challenge areas as part of our Market Vision strategy, and aligned our future research activities to these future areas of impact: Food Security and Quality, Sustainable Energy and Resources, Health and Wellbeing, Resilient and Valuable Environments, Future Industry, and A Secure Australia and Region. These significant challenges provide the customer insight to direct our research moving forward. We believe that addressing these challenges will enable us to deliver effective national benefit into the future. The nature of these challenge areas will be reviewed annually to ensure their ongoing relevance.

5 CSIRO Innovation Fund 1, LP

Rapid change

Many scientific developments require big data technologies, including the ability to develop analytics platforms that are trustworthy and secure. Our capacity to innovate in this space will help Australia's transition to a data-driven economy, underpinned by new industries, and provide new opportunities for partnering with some of the world's leading corporations and institutes.

Rapid technological change is transforming the nature of work itself, requiring a gender balanced, skilled-up workforce with improved access to work for disadvantaged demographics. In the next four years, we will continue our commitment and investment in STEM programs for school students, females, and Aboriginal and Torres Straight Islanders, and by supporting researchers to access innovation funding and training resources, to accelerate their ideas forward. We will continue our emphasis on supporting and progressing technology development to a stage suitable for attracting commercial investment and market uptake. Through programs such as our pilot Industrial PhD and ON we provide the tools to connect talent to need.

CSIRO'S AARON COTTRELL AND JUN ARAKAWA FROM IHI CORPORATION DISCUSS THE PICA POST-COMBUSTION CAPTURE PROJECT AT AGL LOY YANG COAL-FIRED POWER STATION IN VICTORIA.

Our planning environment and framework

We operate in a complex environment. Our Corporate Plan takes into account multiple inputs – from the legislation that created CSIRO, the various market and science priority areas that focus our attention, to the ideas that come from institutions, our partners and the community that support us. All the influences and processes represented here help us decide what we work on in order to solve Australia's biggest challenges.

The Minister and the Board draw upon the *Science and Industry Research Act 1949* (SIR Act), The Board Charter[6], and the Ministerial Statement of Expectations[7] to outline the governance, function, and broader expectations related to our performance. These guide and inform the development of our Statement of Intent and our objectives and priorities for the following four years.

Our strategy, budgeting and risk planning; including the Business Unit strategies, investment decisions and capability deployment processes, also take into account input from external stakeholders, environmental factors and internal negotiations over the allocation of resources.

6 www.csiro.au/en/About/Leadership-governance/Minister-and-Board/Board-Charter
7 www.csiro.au/en/About/Leadership-governance/Minister-and-Board/Statement-of-Expectations

Science and Industry Research Act 1949
Defines CSIRO's purpose, functions and the roles of Board and Chief Executive

Minister's Statement of Expectation
Provides clarity about government policies, priorities and objectives relevant to CSIRO

CSIRO Board Charter
Defines the roles and functions of the Board

STAKEHOLDER EXPECTATION

Statement of Intent[8]
Outlines CSIRO's high-level priorities as directed by the CSIRO Board

CSIRO Strategy (5 year outlook)
Defines goals and deliverables as endorsed by the CSIRO Board and Chief Executive

Government Budget Process (annual)
Defines CSIRO's appropriation as allocated by the Federal Government

CSIRO Risk Framework (annual outlook)
Assesses and plans mitigation of key risks to CSIRO as endorsed by the CSIRO Board

SETS DIRECTION

Business Unit Strategies
Defines goals, activities and deliverables of each Business Unit

Investment Decision Process
Reviews and assesses existing and new investment options

CSIRO Budget Process
Allocation of financial resources in alignment with investment decisions

Capability Deployment Process
Allocation of human resources in alignment with investment decisions

Implementation of investment decisions and delivery of key activities:

Mission-directed research and development

Managing national research infrastructure

Developing national science talent

The areas we operate in:

- Astronomy
- Agriculture
- Biosecurity
- Climate
- Digital technologies and data
- Environment
- Health
- Energy
- Food
- Manufacturing
- Mining

8 www.csiro.au/en/About/Leadership-governance/Minister-and-Board/Statement-of-Intent

CSIRO AND ANATOMICS PRODUCED THE TITANIUM HEEL BONE IMPLANT FOR CANCER PATIENTS USING OUR STATE-OF-THE-ART ARCAM 3D PRINTER.
IMAGE COURTESY ANATOMICS.

Delivering on our strategy

Our response to the challenges

Our Strategy 2020 vision is to become Australia's innovation catalyst, collaborating to boost Australia's innovation performance. Our mission is to create benefit for Australia through impactful science and innovation.

Australia must seize the opportunities of a rapidly changing world if it is to secure its future prosperity. An innovative, globally-competitive Australia needs a united innovation system – a vision CSIRO is uniquely placed to drive.

CSIRO's Strategy 2020 recognises Australia's single biggest opportunity: the gap between our research and industry. Our best ideas are being exported overseas, delivering benefit and economic returns elsewhere. Australia needs an innovation catalyst to turn more of our world-class research into benefit for Australia.

In pursuing this outcome, CSIRO embraces its distinct role as a large-scale mission-directed, multidisciplinary science and technology organisation, and as a preferred industry research and commercialisation partner and a trusted science advisor to government and industry on problems of national significance.

CSIRO's industry focused and mission-directed Business Units and commercial CSIRO Services are key mechanisms for delivering excellent science and achieving outcomes aligned with national challenges, the Australian Government's Science and Research Priorities, and the Industry Knowledge Priorities identified by the Industry Growth Centres, as well as our defined market vision.

CSIRO's Business Units concentrate on strategic research, and knowledge and technology transfer with the potential to deliver major long term social, economic and environmental benefits to Australia. The Business Units do this by working with government, industry and others in the innovation system to support existing industries and to create new ones.

Strategy 2020 directs our science to create economic, environmental and social benefit for Australia.

Customer first

To create deeper innovation relationships with our customers and prioritise the highest value investments.

Collaboration hub

To integrate the best solutions for our customers, increase our flexibility and enhance Australia's innovation performance.

Global outlook, national benefit

To deliver connectivity to the global science, technology and innovation frontier as well as access new markets for Australian innovation.

Breakthrough innovation

To increase our capacity to help reinvent existing industries and create new industries for Australia and deliver public good.

Excellent science

To create breakthrough technology and knowledge and be a trusted advisor for Australia.

Inclusion, trust and respect

To fully enable and support the innovation capacity of our creative people and teams to take risk and deliver to customers.

Health, safety and environment

To enhance staff safety and wellbeing and to further our aspiration towards zero harm.

Deliver on commitments

To enhance our agility, financial sustainability and capacity to respond at the speed of business.

Our capability

The skills we bring to the challenge

We can't achieve our purpose without our people doing and supporting excellent science. Over the next four years we will continue to strengthen our culture, which is the foundation for inclusion, trust and respect; maintaining the highest standards of health safety and environment; and driving improvements to systems and processes to ensure delivery on our commitments.

Excellent science

Core to our purpose is delivering excellent science for industry and the nation. We do this by having world-class scientists and researchers, strong partnerships, and first-rate facilities and support specialists, who collaboratively strive to create solutions to Australia's biggest challenges. Our scientific reputation is internationally outstanding. Our work is recognised and used across the world in industries and communities, which has real-world benefits and changes lives.

To become Australia's innovation catalyst, we must provide an environment that encourages our people to work collaboratively and creatively to deliver a positive impact for Australia and the world. We do this through four key focus areas:

- **Science excellence** – pursuit of discovery through rigorous evidence and peer review.
- **Empower** – encourage creative and cutting-edge thinking for breakthrough innovations.
- **Mobility and agility** – move swiftly to deliver impact and respond to changes.
- **Talent** – build, attract and retain innovative capability for Australia.

Delivery on our commitments

Constantly improving the systems and processes that manage our work is key to delivering our objectives and responding in a faster, more agile, and collaborative way to meet our customers' needs.

We will continue building and refining the functionality of our enterprise applications to provide transparency and efficiency in how we manage our investment and deliver our projects for greater impact. In focus for 2017–18 will be relationship management processes, particularly as these relate to our strategic customers and stakeholders, with enhanced system support and improved understanding of roles and responsibilities.

In addition, in the next four years, we will continue to develop our system integration; reuse of data; and reporting and analytics capability to increase transparency and availability of relevant information throughout CSIRO.

Culture

We are committed to building the cultural conditions needed to support existing and future strategic priorities, and to deliver on our unique purpose. To achieve this aspiration we will:

- Develop our leaders to deliver transformational change by better entrusting, engaging and utilising CSIRO's highly capable, diverse and willing talent.
- Develop our people to deliver CSIRO's vision, mission and strategy, by supporting their participation in purpose built events, forums, programs and initiatives.
- Empower our people, by enabling integrated change management and developing agile systems, processes and management practices.
- Leverage and empower the willingness, dedication and capability of our people and teams, by helping them see their place in CSIRO, and their contribution to the organisation and support of our nation.
- Increase our contribution to the mobility and exchange of people and know-how between research, industry and government.
- Increase our engagement in education and training from school age to PhD level.

Inclusion, trust and respect

We recognise the importance of diversity and inclusion, and continue to build and improve the number of initiatives that support those outcomes. On 1 July 2017, we introduced a flexible work change program called Balance. It's a response to widespread recognition that the workplace is changing and, consequently, people need greater flexibility to balance the demands of work and personal commitments. Balance is a disruptive initiative that will create a more inclusive workplace – for people at all stages of their careers and lives.

We also actively participate in a key Government-funded (National Innovation Statement) initiative – the Science in Australia Gender Equity (SAGE) program. SAGE is designed to improve gender equity and diversity in Science, Technology, Engineering, Mathematics and Medicine (STEMM), and is a partnership between the Australian Academy of Science and the Australian Academy of Technology and Engineering. We are working towards a Bronze Award (mandatory entry level) accreditation in March 2018 which requires us to collect, analyse and present our data on gender equity policies and practices in STEMM; identify gaps and opportunities for improvement; and, most importantly, develop concrete plans for advancement.

We are continually improving our accountability and supporting mechanisms to make sure each CSIRO workplace is one where everybody is valued and treated with respect.

Health, safety and environment

In 2016–17, we developed case-study-based health, safety and environment leadership training which encourages all leaders to explore the implementation of seven key safety principles across a variety of different research and team scenarios. This training will continue to be rolled out over the next few years, and leaders will be facilitated to use the case studies to explore and enhance safety behaviours within their teams.

Key to our people embracing safety in their work is their involvement in helping to make the safety processes and procedures used simple and practical for their application in a research environment. Developed in conjunction with our researchers, the process of simplification of health, safety and environment risk management and individual safety procedures will be completed during 2017–18. The focus in the following three years will then be on embedding these processes and on using the information being gathered in the recently upgraded incident and action reporting system to drive continuous improvement. There will also be a focus on enhancing the processes, training and support in the key risk areas of biological, chemical and radiation safety.

The wellbeing of our people is critical to us becoming Australia's innovation catalyst. Our wellbeing strategy has been reviewed and is being expanded to be a more holistic framework that includes cultural, organisational and individual aspects. This framework leverages the skills from our health team along with the skills of other teams including other science areas, learning and development, human resources, health, safety and environment and infrastructure.

We are committed to continuous improvement in health, safety and environment. This will be achieved through the above programs of work and also by continuing to work with our commercial and research partners to look for better ways to do things.

CSIRO will transition to a more encompassing Sustainability Strategy by:

- Maintaining the current focus on energy and carbon emission reduction.
- Renewing attention on water and waste reduction.
- Engaging with Business Units to improve understanding and accountability to reduce their environmental impacts.
- Strengthening linkages to existing strategies such as Diversity and Inclusion, the Reconciliation Action Plan, our flexible work change program Balance, Wellbeing Strategy and the revitalised CSIRO Property Plan.
- Identify new and innovative opportunities in sustainable procurement and with supply chain partners.
- Identify opportunities to increase engagement with the communities in which we operate.

We will maintain focus on the rollout of on-site photovoltaic cell capacity, to continue work towards achieving the target of 5 MW on-site renewable generation. Furthermore, we will establish a roadmap to address energy security to counter rising energy prices. In addition to continued implementation of projects that reduce energy use and emissions, we will investigate funding mechanisms to increase penetration of our innovations into our operations, including identification of technologies that will support the 'Living Laboratory' concept for the Ginninderra development.

Our activities

The work we do to tackle the challenge

Our core and supporting activities reflect our purpose and address the challenges of today and the future. We do this by conducting world-class research, encourage adoption, manage national research facilities and develop the next generation of scientists.

Our core activities

Mission-directed research and development

Our research and development activities are focused on specific goals and impact objectives through multidisciplinary teams established around key national challenges. They also provide timely advice, information and specific solutions that inform and protect society and the environment and help industry be more competitive. The adoption of our research and other services is achieved through partnerships and engagement with large, medium and small enterprises, including Australian and international private and public sector organisations, and collaborations with other publicly funded research agencies and universities.

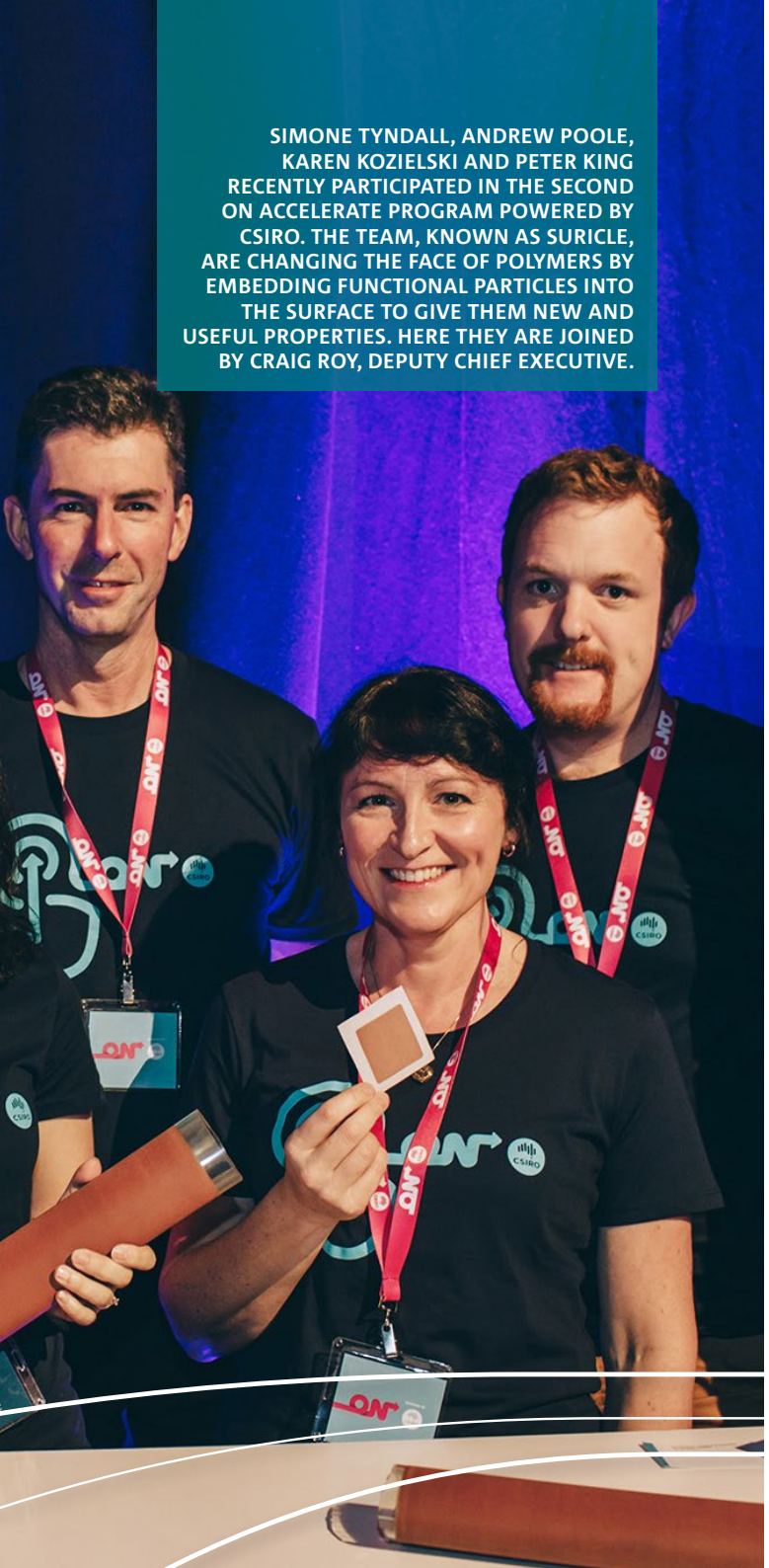
We also invest in opportunities that bring forward the commercialisation of research-based solutions aligned with Government's Science and Research Priorities, and priority industry sectors as currently articulated via Growth Centres. A specific focus to 2021 will be the activities of the our Innovation Fund[9], which begins operations in 2017–18 and will fund start-up and spin-off companies and SMEs engaged in the translation of research generated in the Australian publicly funded research sector. By 2021 the Fund aims to have investments made in more than 20 viable opportunities for scalable science and technology businesses that solve real problems.

During the period covered by this Plan, we will also focus investments in Future Science Platforms (FSPs). The FSP program is designed to create the scientific platforms which will underpin our future ability to deliver impact and national competitiveness from our research.

We will grow our investment in the FSP program established in 2016–17 (see Table 1) and aim to commence at least one new Platform during 2017–18. The FSPs offer new opportunities for our scientists to work on discovery science in areas with strong prospects to transform industries with breakthrough solutions. The FSPs will also help increase internal and external collaboration by attracting the best students and researchers to work with us.

As the FSP program operates at the high technical risk end of scientific challenge, we expect that, over the years to 2021, we will start and cease a number of FSPs as they either achieve critical mass or fall short. This managed portfolio approach will ensure that we continue to extend the level of challenge in our science, pursuing the most promising directions. By the end of 2021, we aim for the program to have resulted in breakthrough outcomes making a difference to our research and in the world.

9 CSIRO Innovation Fund 1, LP



SIMONE TYNDALL, ANDREW POOLE, KAREN KOZIELSKI AND PETER KING RECENTLY PARTICIPATED IN THE SECOND ON ACCELERATE PROGRAM POWERED BY CSIRO. THE TEAM, KNOWN AS SURICLE, ARE CHANGING THE FACE OF POLYMERS BY EMBEDDING FUNCTIONAL PARTICLES INTO THE SURFACE TO GIVE THEM NEW AND USEFUL PROPERTIES. HERE THEY ARE JOINED BY CRAIG ROY, DEPUTY CHIEF EXECUTIVE.

TABLE 1: CURRENT FUTURE SCIENCE PLATFORMS

TITLE	SUMMARY
Active Integrated Matter (AIM)	A new technology platform combining materials, robotics, processing and sensing technologies, and autonomous science to lead ground-breaking advances at the interface of big data, advanced autonomous systems, and materials science. Inventions and advances at these interfaces will drive the i-manufacturing or manufacturing 4.0 revolution; and will put early adopter industries ahead of the competition.
Environomics	This platform aims to reinvent how we measure and monitor ecosystem health, predict biodiversity responses to environmental change, manage biological resources, detect biosecurity threats, and more. This next generation of environmental science will be based on genomics, phenomics, big data informatics and simulation.
Digiscape	We're developing the next generation decision support tools which will transform our agricultural industries and environmental planning, policy and implementation. With these advances, we will open up new partnerships, generate new revenue streams, and provide a new way to recognise and manage risk and uncertainty. We will mix cutting edge science and technology with innovation in integration; and anchor the research in end-user experience and feedback.
Probing Biosystems	A revolution in healthcare and agriculture through devices and systems to obtain real-time information from living organisms about their health and well-being. This will lead to the ability to provide health and medical interventions that are timely, customised, and highly specific.
Synthetic Biology	The design, fabrication, and construction of new biological parts, devices, systems, and machines, as well as the re-design of existing, natural biological systems for useful purposes. Synthetic biology enables revolutionary advances in cellular factories, designer organisms and biological devices.
Deep Earth Imaging	In the future, Australia's minerals, energy, and water resources will come from far greater depths in the Earth and from deep offshore plays, but our ability to find and exploit these resources is limited by the deep and complex cover of sediments and weathered material that covers 80 per cent of Australia's land mass. The science of Deep Earth Imaging will help us more precisely image subsurface rock properties to unlock the potential of this vast and relatively underexplored area.

OUR STEM PROFESSIONALS IN SCHOOLS PROGRAM PARTNERED ELLINE CAMILET WITH A TEACHER AT REGINA COELI PRIMARY SCHOOL TO INCREASE STUDENT ENGAGEMENT IN STEM AND LEARN HOW IT APPLIES TO THE REAL WORLD.

Managing national research infrastructure

We host national research infrastructure on behalf of the scientific community to assist with the delivery of research. The National Research Infrastructure includes the National Facilities that provide large-scale, specialised facilities and equipment; and the National Collections, which are storehouses of information on Australia's biodiversity and other aspects of the environment. To maintain the global significance and utilisation of the facilities and collections, we undertake:

- the identification and development of collections which are vital platforms to enable research, collections of unique Australian heritage, or both;
- the identification of the need, design and creation of new facilities;
- the day-to-day management, operation and enhancement of the National Facilities and Collections; and
- ensuring access, both nationally and internationally, to the National Facilities and Collections.

In the next four years to 2021, we will focus on maintaining the Facilities and Collections to the appropriate standards and ensuring access and utilisation by the scientific community in order to collaboratively address national economic, environmental and social priorities.

Developing national science talent

We undertake a number of high-profile, significant education and outreach activities (e.g. STEM Professionals in Schools and the Indigenous STEM Education Program) to increase knowledge of science and its application to students, parents, teachers and the Australian community.

We will continue to develop national science talent by growing the number of students (undergraduate and postgraduate) we train and develop as well as increasing the number of early career researchers through our Postdoctoral Fellow programs over the next four years.

Of equal importance is to support an increase in number and the skills of students and researchers working in the Australian community. We also give early-career researchers experience in technology transfer and uptake, like through our SIEF-funded SMEs in STEM+ Business Fellowship program.

This work contributes to the maintenance of Australia's science capacity, which helps Australia to remain innovative and competitive in science.

CSIRO activities at a glance

MISSION-DIRECTED RESEARCH AND DEVELOPMENT

Agriculture and Food

Agriculture and Food's technologies, management and knowledge systems will generate a sustainable gain in profitability of >$3 billion per annum with multiple benefits to the economy, environment and society of Australia. Our research outputs on food and fibre production and value adding will capture growing regional export markets for Australian industries and be integral to sustainably meeting the global challenge of increasing demand for food and bio-based products.

Data61

Data 61's vision is to create the digital innovation network across the nation that can transform existing industries and, within the next five years, seed new industries through the application of deep science and technology that will grow the economy and create the jobs of the future.

Manufacturing

By 2030 we will have developed, in conjunction with our partners, the specific industry driven scientific and engineering innovations to transition Australian manufacturing into a globally connected, economically viable, high-technology sector; creating the jobs of the future, export growth and investment in the nation's manufacturing industry and increasing the value of the sector.

Health and Biosecurity

By 2025, we will deliver solutions to challenges facing Australia's health and biosecurity systems, providing a boost to the economy and having positive impact on our environment, agricultural profitability and human health.

Energy

Deliver science-based solutions and knowledge that will sustain Australia's economic growth and energy export competitiveness while enabling a transition to a sustainable, secure, reliable and affordable lower emissions energy future.

Mineral Resources

Deliver science and technology options for the discovery and efficient development of Australia's mineral resource endowment that enable flow-on benefits to the wider national economy.

Land and Water

Deliver solutions for sustainable development and stewardship of land, water, ecosystems and communities, valued at over $12 billion per annum in triple bottom line benefits.

Oceans and Atmosphere

We will demonstrably increase Australia's share of the global $3 trillion dollar blue economy by 2020 and enhance Australia's preparedness and resilience to environmental change, climate change and climate variability.

MANAGING NATIONAL RESEARCH INFRASTRUCTURE

To manage Australia's state-of-the-art infrastructure and biological collections to enable the delivery of benefits and impacts to the Australian people, environment, research and industry.

Digital National Facilities and Collections

Astronomy and Space Science
Understanding the universe

Australian Animal Health Laboratory
Protecting Australia

National Research Collections Australia
Securing our biodiversity future

Marine National Facility
Supporting, enabling and inspiring marine science

National computing infrastructure
High performance innovation

DEVELOPING NATIONAL SCIENCE TALENT

CSIRO Services

Delivering Education, SME Engagement, Infrastructure Technologies, Publishing and Futures to build Australia's science skills and capacity and deliver innovative businesses

Enterprise Support Services

Professional, relevant advice and assistance supporting CSIRO's Business Units and operations to deliver on our mission.

Supporting activities

Enterprise Support Services

Enterprise Support Services enable us to fulfil our purpose by ensuring we have effective and efficient operations, supported by helpful processes, systems and people. Managing and maintaining our scientific and research facilities and other physical assets is a critical component in our ability to deliver world-class science and national outcomes. This also includes managing financial obligations, which directly impact our ability to undertake research and maintain research infrastructure. It also includes information management services to deliver information technologies and library services that support our general operation and big data research activities.

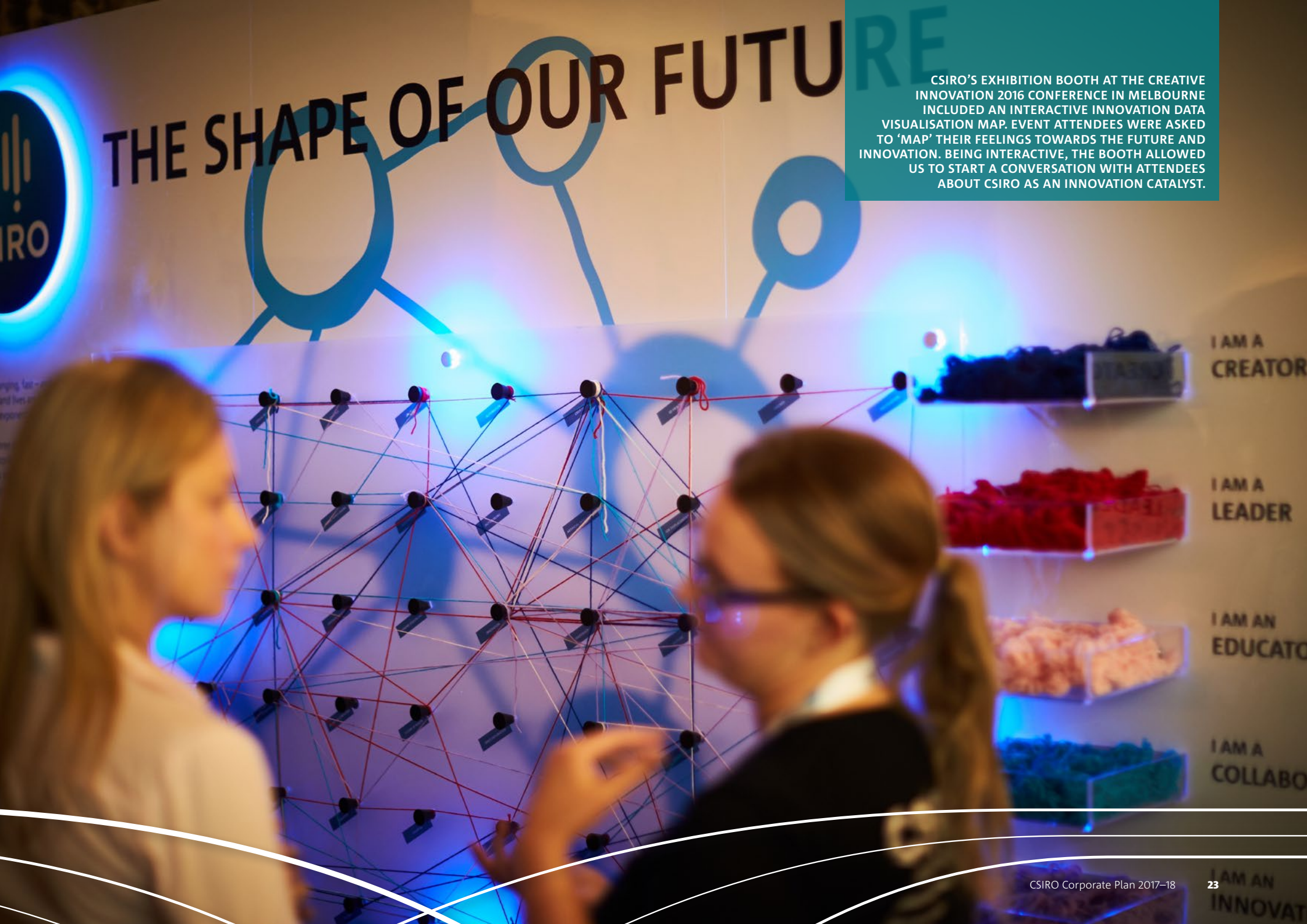
Our human resources, health, safety and environment, and organisational development activities ensure that our research and infrastructure management is undertaken safely, and environmentally sustainably, and that the talent of existing and future staff can be nurtured. Commercial and governance activities support effective organisational decision making and ensure that researchers and the business meet our legal obligations, and develop the relationships that enable the creation and uptake of our science and technology.

Our strategy development, global operations, science policy and performance management support the targeting of our science investments to the highest priorities, measuring of our science and organisational performance, and the delivery of impact. Our government engagement and communications activities create and manage the narratives to inform and advise government, customers, partners and the public about us and our science.

TABLE 2: CSIRO INVESTMENT BY ACTIVITIES

TOTAL EXPENSES BY ACTIVITIES ($M)	2017–18	2018–19	2019–20	2020–21
Research Business Units	692.0	718.0	747.0	778.9
CSIRO Services	34.6	38.8	37.4	29.6
National Research Infrastructure	130.7	132.4	132.9	141.6
Enterprise Support Services	220.6	238.4	226.3	218.5
Enterprise fixed costs	285.6	285.9	287.3	288.9
TOTAL EXPENSES	**1,363.5**	**1,413.5**	**1,430.9**	**1,457.4**

AVERAGE STAFFING LEVEL BY ACTIVITIES				
Research Business Units	3,263	3,337	3,438	3,438
CSIRO Services	164	167	172	172
National Research Infrastructure	469	480	494	494
Enterprise Support Services	1,167	1,195	1,231	1,231
TOTAL AVERAGE STAFFING LEVEL (NUMBER)	**5,063**	**5,179**	**5,335**	**5,335**



CSIRO'S EXHIBITION BOOTH AT THE CREATIVE INNOVATION 2016 CONFERENCE IN MELBOURNE INCLUDED AN INTERACTIVE INNOVATION DATA VISUALISATION MAP. EVENT ATTENDEES WERE ASKED TO 'MAP' THEIR FEELINGS TOWARDS THE FUTURE AND INNOVATION. BEING INTERACTIVE, THE BOOTH ALLOWED US TO START A CONVERSATION WITH ATTENDEES ABOUT CSIRO AS AN INNOVATION CATALYST.

Our performance

How we're measuring our success

Our legislated purpose is bold and broad in its vision. To ensure our success, we collaboratively address national priorities and assist industry by conducting and encouraging the uptake of world-class scientific research, managing research facilities on behalf of the nation, and mobilising and developing the next generations of scientists for the benefit of Australia.

We set clear objectives and key actions to be carried out and measured across our entire organisation.

Our performance review processes, detailed in our Planning and Performance Framework, provide the opportunity to evaluate the appropriate, effective and efficient use of the resources entrusted to us. Our organisational performance is measured against enterprise performance metrics for each organisational objective to 2020–21. We provides quarterly progress updates against these metrics to our Executive Team and annually to our Board. The performance criteria and indicators (see Table 3) incorporate those published in our 2017–18 Portfolio Budget Statement (PBS) to provide our complete performance story and will be reported in our 2017–18 annual performance statement.

Additionally, we undertake Annual Performance and Investment Reviews of our Business Units and Enterprise Support Services. The process is designed to ensure we invest in areas of strategic importance to the nation over the next four years; create sustainable revenue streams; and achieve our strategy objectives and targets as delegated to Business Units and Enterprise Support Services. The Annual Performance and Investment Reviews provide an opportunity for the Business Units and Enterprise Support Services and our leaders to consult on their strategies and mechanisms for achieving them. The reviews provide details on:

- progress on the implementation of Business Unit strategy;
- engagement with customers, opportunity pipelines and revenue forecasts; and
- any cross portfolio, collaboration activities.

Through our Planning and Performance Framework we achieve a consistent organisation-wide approach to planning activities, which is carried through to managing, evaluating and reporting their outcomes.

CSIRO Planning and Performance Framework

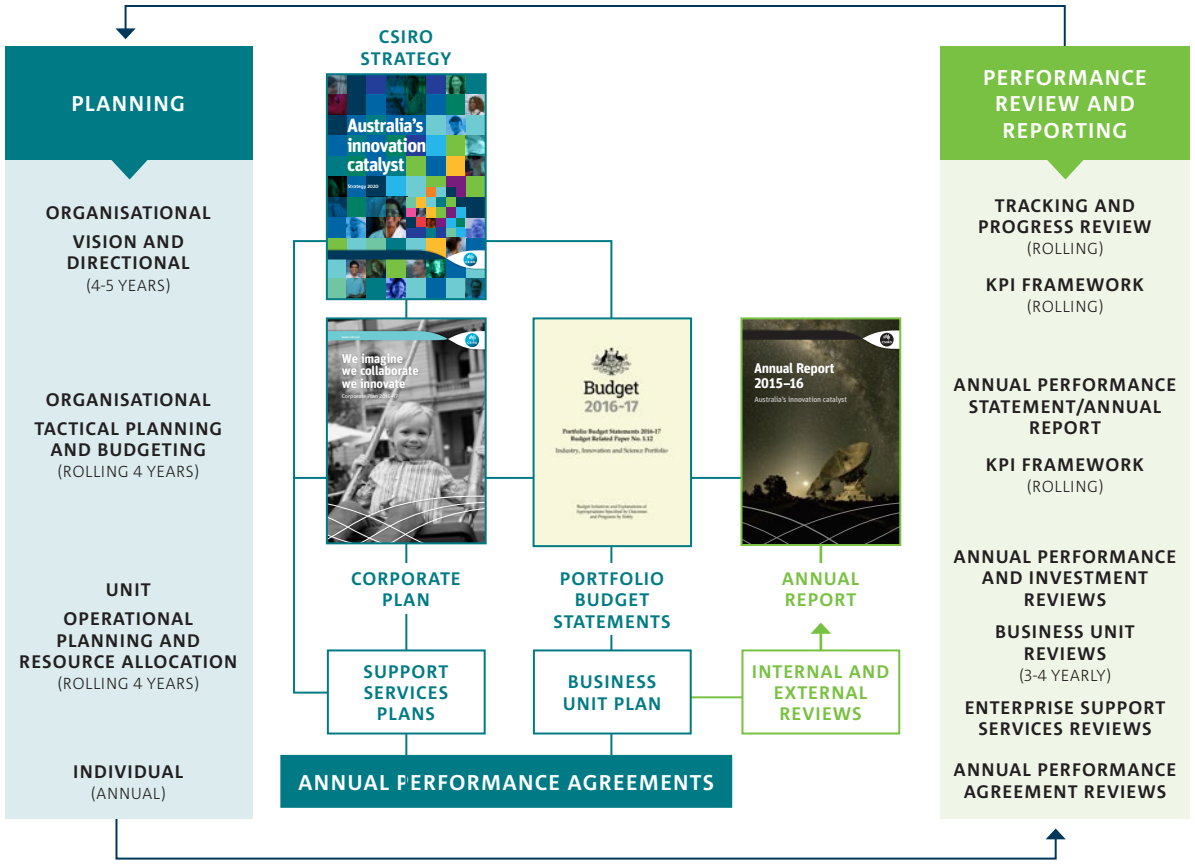


TABLE 3: ENTERPRISE PERFORMANCE MEASURES AND TARGETS

CORE ACTIVITY	KPI	METRIC	STRATEGY 2020 ALIGNMENT	2017–18	2018–19	2019–20 AND BEYOND
Mission-directed research and development	Demonstrate triple bottom line impacts	Collection of externally validated case studies	Customer first	Minimum of 6 per year	Minimum of 6per year	Minimum of 8per year
		Maintain or increase the assessments on 'impact' criteria from independent Business Unit Reviews in the top two rating levels		80% either 'benchmark' or 'strong'	80% either 'benchmark' or 'strong'	80% either 'benchmark' or 'strong'
		Conduct an external 'Value of CSIRO Impact Assessment' every 2 years		BCR = 5:1	-	BCR = 5:1
	Science Excellence	Maintain or increase normalised citation rate relative to global average performance	Excellent science	Top quartile of Australian universities & >50% above global average	Top quartile of Australian universities & >50% above global average	Top quartile of Australian universities & >50% above global average
	Strategic innovation investment	Direct science investment including future science platforms, capability development and central competitive funds		$18m	$30m	$40m
		Pipeline of investable propositions from the CSIRO Innovation Fund 1, LP from the PFRA research institutions from each of the eligible participant stakeholder groups	Breakthrough innovation	At least 5 investable propositions being pursued	At least 5 investable propositions being pursued	At least 5 investable propositions beingpursued
	University engagement	Feedback from universities involved in the ON Program – maintain or increase their willingness to recommend the Program (4 or higher on a 5 point scale)	Collaboration hub	80% highly recommend	80% highly recommend	80% highly recommend
	Customer and user satisfaction	Customer Net Promoter Score	Customer first	+16	+18	+20
	Research partnerships	Proportion of research projects involving more than one organisation	Collaboration hub	>93%	>94%	>94%
SUPPORTING ACTIVITY	**KPI**	**METRIC**	**STRATEGY 2020 ALIGNMENT**	**2017–18**	**2018–19**	**2019–20 AND BEYOND**
Enterprise Support Services	Diversity and inclusion	Increase the number of shortlisted female applicants for leadership positions (CSOF 6 – 9)	Inclusion, trust and respect	> 30%	> 35%	> 40%
	Morale	Staff Engagement score as measured through the Staff Survey		78%	80%	80%
	Reputation	Staff are proud to be associated with CSIRO		82%	84%	85%
		Maintain or increase public perception of CSIRO	Customer first	82%	84%	85%
	Staff safety	Regulatory Reportable Comcare Incidents	Health, safety and environment	9	9	8
		% HSE audits and reviews actions completed on time		80%	90%	95%
	Budget operating result	Meet or exceed bottom line budget operating result as approved by the Board	Deliver on commitments	Achieved or exceeded	Achieved or exceeded	Achieved or exceeded

TABLE 4: PBS PROGRAM PERFORMANCE MEASURES

CORE ACTIVITY	KPI	METRIC	STRATEGY 2020 ALIGNMENT	PBS PROGRAM	2017-18	2018-19	2019-20 AND BEYOND
Mission-directed research and development	Demonstrate triple bottom line impacts	Maintain or increase the assessments on 'impact' criteria from independent Business Unit Reviews in the top two rating levels	Customer first	Program 1.1	80% either 'benchmark' or 'strong'	80% either 'benchmark' or 'strong'	80% either 'benchmark' or 'strong'
	Science Excellence	Direct science investment including future science platforms, capability development and central competitive funds	Excellent science	-	$18m	$30m	$40m
	Strategic innovation investment			Program 1.1			
		Pipeline of investable propositions from the CSIRO Innovation Fund 1, LP from the PFRA research institutions from each of the eligible participant stakeholder groups	Breakthrough innovation	Program 1.1	At least 5 investable propositions being pursued	At least 5 investable propositions being pursued	At least 5 investable propositions being pursued
	Customer and user satisfaction	Customer Net Promoter Score	Customer first	Program 1.1	+16	+18	+20
	Research partnerships	Proportion of research projects involving more than one organisation	Collaboration hub	Program 1.3	>93%	>94%	>94%
Managing national research infrastructure	Maintenance and operations of the research infrastructure to appropriate standards	Compliance with Australian legislation and regulations and ISO accreditations	Excellent science	Program 1.2	Maintain compliance with Australian legislation and regulations and ISO accreditations	Maintain compliance with Australian legislation and regulations and ISO accreditations	Maintain compliance with Australian legislation and regulations and ISO accreditations
	Utilisation of the research infrastructure and collections	Utilisation of the facilities and collections as measured through: successful observations[10], time lost during observations and operations, core hours used, outward loans and successful research days delivered[11].		Program 1.2	Minimum of 70% successful astronomy observations	Minimum of 70% successful astronomy observations	Minimum of 70% successful astronomy observations
					Maximum 5% time lost during scheduled observation	Maximum 5% time lost during scheduled observation	Maximum 5% time lost during scheduled observation
					90% core hours on Magnus supercomputer	90% core hours on Magnus supercomputer	90% core hours on Magnus supercomputer
					70% outward loans (over 5 years)	70% outward loans (over 5 years)	70% outward loans (over 5 years)
					Minimum of 90% successful research days delivered on MNF	Minimum of 90% successful research days delivered on MNF	Minimum of 90% successful research days delivered on MNF
					Maximum of 10% time lost during scheduled MNF operations	Maximum of 10% time lost during scheduled MNF operations	Maximum of 10% time lost during scheduled MNF operations

10 Success measures that observations were able to be completed

11 Success means the science was able to be completed consistent with the voyage objectives

TABLE 4: PBS PROGRAM PERFORMANCE MEASURES CONT.

CORE ACTIVITY	KPI	METRIC	STRATEGY 2020 ALIGNMENT	PBS PROGRAM	2017-18	2018-19	2019-20 AND BEYOND
Developing national science talent	Utilisation of science outreach programs as measured through participation	Numbers of participants	Breakthrough innovation	Program 1.1	5% increase	10% increase	10% increase
	Additional STEM+ Business funding	Number of projects where additional STEM+ Business funds are spent on research between the company and the STEM+ Fellow's host research team or with others	Collaboration hub	Program 1.3	-	12	12
	Technologies receiving ongoing commercialisation support from their Vice Chancellor or industry sources after one year of completing the Experimental Development Program	Case studies of technologies	Customer first	Program 1.3	-	Minimum of 1 case study	Minimum of 1 case study

THE CSIRO BOARD FROM LEFT TO RIGHT; MICHELE ALLAN, HUTCH RANCK, LARRY MARSHALL, DAVID THODEY, TANYA MONRO, PETER RIDDLES, SHIRLEY IN'T VELD, EDWINA CORNISH, DAVID KNOX, IN FRONT OF THE 70-METRE ANTENNA AT THE CANBERRA DEEP SPACE COMMUNICATION COMPLEX AT TIDBINBILLA.
ABSENT DREW CLARKE.

Our governance

Who is leading our response

We are committed to conducting the affairs of the organisation with integrity and in the national interest consistent with the functions of CSIRO as set out in the *Science and Industry Research* (SIR) *Act 1949*, the *Public Governance, Performance and Accountability (PGPA) Act 2013*, and other relevant legislation. We are accountable to the Minister for Industry, Innovation and Science as part of the Industry, Innovation and Science Portfolio.

Our Board and Committees

We are governed by a Board, who are responsible to the Australian Government for the overall strategy, governance, and performance of our organisation. The Board operates in accordance with the SIR Act, which sets out the functions, composition, and operations of the Board; and the PGPA Act and related Rules which sets out the general duties of the Board and officials, and planning, accountability, and other requirements.

The Board is primarily responsible for ensuring CSIRO has the appropriate governance to deliver its purpose to collaboratively address national economic, environmental, and social priorities. The Board is supported by three standing committees, and two advisory committees.

The Board meets at least quarterly and comprises a non-executive Chairman, up to eight other non-executive Members, and a full-time Chief Executive. All Board members (other than the Chief Executive) are appointed by the Governor-General. The Chief Executive is appointed by the Board. Current Board Members as of 1 July 2017 and their appointment dates are:

- **Mr David Thodey, AO**: CSIRO Board Chairman, BA FAICD, Company Director (15.10.15 to 14.10.20)
- **Dr Larry Marshall**: Chief Executive, BSc (Hons) PhD GAICD FTSE (01.01.15 to 31.12.16; 01.01.17 to 30.06.20)
- **Ms Shirley In't Veld**: Deputy Chair, BCom LLB FAICD, Company Director (28.06.12 to 27.06.15; 28.06.15 to 27.06.20)
- **Dr Michele Allan**: BAppSc MMgtTec MCommLaw DBA FAICD, Company Director (05.05.16 to 04.05.19)
- **Prof Edwina Cornish, AO**: BSc (Hons) PhD FTSE MAICD FAIM (26.11.15 to 25.11.20)
- **Mr David Knox**: BSc (Hons) Mech Eng MBA FIE Aust FTSE GAICD, Company Director (05.05.16 to 04.05.19)
- **Prof Tanya Monro**: BSc (Hons) PhD FAA FTSE FOSA FAIP GAICD, Company Director (25.02.16 to 24.02.21)
- **Mr Hutch Ranck**: BSc Economics FAICD, Company Director (05.05.16 to 04.05.18)
- **Mr Peter Riddles**: BSc (Hons), PhD, Grad Dip Bus FAICD, Company Director (24.04.14 to 23.04.17; 24.04.17 to 23.04.22)
- **Mr Drew Clarke, AO PSM**: BAppSc (Surveying) MSc GAICD FTSE, Company Director (24.08.17 to 23.08.22).

The primary functions of the Board are to:

- ensure the proper and efficient performance of the functions of the organisation;
- determine the policy of the organisation with respect to any matter; and
- give directions to the Chief Executive.

The Board is also accountable for the controlled entities of CSIRO that are an integral part of our strategy to 2021:

- Science and Industry Endowment Fund (SIEF);
- WLAN Services Pty Ltd;
- Fundación CSIRO Chile Research;
- National ICT Australia (NICTA)
- CSIRO Innovation Fund[12]; and
- USA Office.

Our subsidiaries play an important part in realising our strategy over the planning period 2017–2021, by supporting relationships with key industry and science organisations, including globally, facilitating research activity and enabling the commercialisation of science and innovation.

The Board operates in part through three standing committees:

1. **People, Health and Safety Committee** assists the Board to fulfill 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.

12 CSIRO Innovation Fund 1, LP

Chief Executive

Our Chief Executive is responsible to the Board for the overall development of strategy, management and performance of CSIRO.

Our Chief Executive is responsible for the affairs of CSIRO subject to any policies determined by the Board, and any directions given by the Board, to achieve the organisation's objectives.

Our Chief Executive is supported by the Executive Team to lead, direct, coordinate and control the operations and performance of CSIRO.

Executive Team and Committees

Our Executive Team's role is to determine matters, or make recommendations to our Chief Executive and through the Chief Executive to our Board, regarding the direction and operations of the organisation.

Our Executive Team comprises:

- Dr Larry Marshall, Chief Executive
- Mr Craig Roy, Deputy Chief Executive
- Ms Hazel Bennett, Chief Operating Officer
- Dr Anita Hill, Chief Scientist and Director, Future Industries
- Dr Peter Mayfield, Director, Environment, Energy and Resources
- Dr David Williams, Director, Digital, National Facilities and Collections
- Dr John Manners (Ex-Officio member), Director, Agriculture and Food

Our Executive Team is supported by two committees:

1. **Science, Strategy, Investment, and Impact Committee,** which supports our Executive Team in directing and controlling CSIRO's strategic science, capability, capital, support, and impact planning, investment and performance management.
2. **Major Transactions Committee,** which supports our Executive Team in directing and controlling CSIRO's involvement in major transactions and related matters and investment.

Advisory Committees under s24 of the SIR Act 1949

AUSTRALIA TELESCOPE STEERING COMMITTEE

The Australia Telescope Steering Committee provides independent advice to the Director of the Australia Telescope National Facility (ATNF) on the scientific and technical operations of the ATNF. The committee advises the ATNF Director on the broad directions of the ATNF's scientific activities and longer term strategies for the development of the ATNF; and advocates to develop the Australian Telescope as a world class national facility for use by Australian and international researchers. Committee members are both academic and industry stakeholders.

MARINE NATIONAL FACILITY STEERING COMMITTEE

The Marine National Facility Steering Committee provides independent advice to the Director of the Marine National Facilities (MNF) on strategic issues such as maximising the use of the RV *Investigator*, and ensuring all science undertaken through the RV *Investigator* has national benefit. The committee acts as an advocate for the MNF and for CSIRO's marine-based research capability with its many stakeholders within Australia and internationally. Committee members are from academic, industry and government backgrounds

Internal Consultative and Advisory Mechanisms under s56 of the SIR Act 1949

CONSULTATIVE COUNCIL

The Consultative Council's role is to consider and report to the Board on any matter affecting, or of general interest to, the officers of the organisation, including any matters that are referred to the Council by the Board. The Consultative Council comprises a Chairperson, who is appointed by the Board, and up to seven (currently five) other management members who are also appointed by the Board. The staff representatives are appointed by CSIRO trade unions. At present there are six representatives, five from the CSIRO Staff Association and one from the Australian Manufacturing Workers' Union (AMWU). Advisers and observers may be nominated by any member to attend meetings of the Council.

CSIRO BUSINESS ADVISORY COMMITTEES

The CSIRO Business Advisory Committees provide independent, external advice through the Business Unit Director on how to maximise the effectiveness of the Business Unit portfolio to achieve its goals. They also assist on broader strategic issues relevant to the sectors in which the Business Unit operates. Committee members are from industry and other stakeholder groups.

THE OUTBACK ROVER IN SALT LAKE, WESTERN AUSTRALIA REMOTELY MONITORS AND CALIBRATES OVERHEAD SATELLITES.

Organisational structure

BOARD

CHIEF EXECUTIVE

DEPUTY CHIEF EXECUTIVE

- Agriculture and Food
- Business Development and Commercial
- Global
- Human Resources
- Organisational Development and Change
- Strategy, Market Vision and Innovation
- Science Impact and Policy

CHIEF OPERATING OFFICER

- Business and Infrastructure Services
- Finance
- Corporate Affairs
- Governance and Board
- Health, Safety and Environment

DIGITAL, NATIONAL FACILITIES AND COLLECTIONS

- Data61
- Information Management and Technology

ENVIRONMENT, ENERGY AND RESOURCES

- Energy
- Land and Water
- Mineral Resources
- Oceans and Atmosphere

FUTURE INDUSTRIES AND CHIEF SCIENTIST

- Health and Biosecurity
- Manufacturing

NATIONAL FACILITIES AND COLLECTIONS

- Australian Animal Health Laboratory
- CSIRO Astronomy and Space Science
- National Collections and Marine Infrastructure

CSIRO SERVICES

- SME Connect
- Education and Outreach
- CSIRO Publishing
- Infrastructure Technologies
- CSIRO Futures

AS AT 1 JULY 2017

RESEARCH CONDUCTED ON THE RV *INVESTIGATOR*, WHICH TRAVELS AS FAR AS ANTARTICA, CARRIES A HIGH INHERENT RISK TO THE HEALTH AND SAFETY OF OUR PEOPLE. OUR RISK SYSTEM ENABLES US TO MANAGE SUCH RISKS TO A LEVEL WHICH SUPPORTS OUR ASPIRATION FOR ZERO HARM.

Our risk management

How we ensure we're here for the future

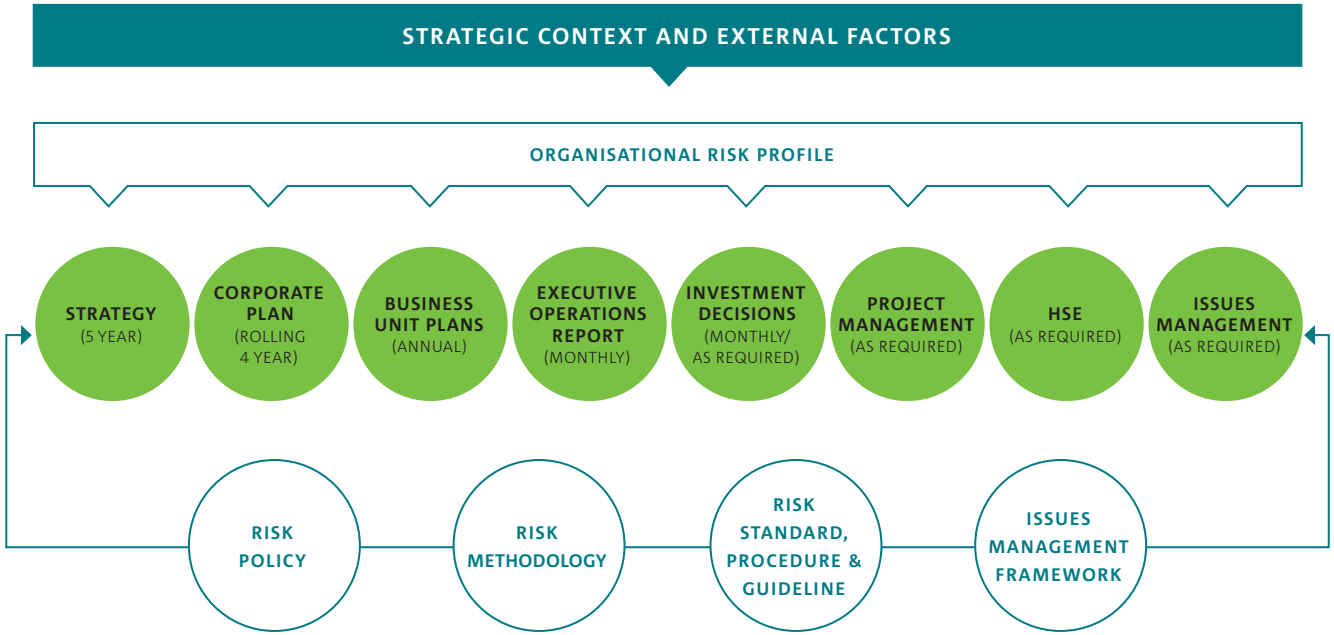
Accepting and managing risk is essential to delivering our purpose. We recognise that we have an appetite for risks associated with aligning our brand publically to the work we do and the impact we create, undertaking technically challenging science with a high inherent risk of failure, and engaging in activities associated with that challenging science that often have a high inherent risk to the health and safety of our people and the environment.

We have zero tolerance for actions that result in compromising our scientific integrity or breach our legal and regulatory obligations; and we manage health, safety and environmental risks to a level which supports our aspiration for zero harm. We have no tolerance for actions that endanger workplace safety.

With that appetite for risk comes an obligation to fully commit to the identification, monitoring and management of key strategic and operational risks which threaten to impede our activities. These risks are reviewed and managed through our Risk System; and are articulated at the enterprise level in our Organisational Risk Profile. Risks in terms of our strategic environment include support for strategic priorities, protecting our brand, and achieving financial sustainability and growth. Risks in terms of our operational environment are associated with managing customer relationships; maintaining science excellence; operational execution and delivery; good governance; health, safety and environment; security breaches; and misconduct.

We identify, monitor and manage key strategic and operational risks as depicted in our Risk System. The primary output of the system is our Organisational Risk Profile, which is developed in the context of our strategy and external environment, and both informs and is informed by a series of subsidiary risk outputs developed at a Business Unit, Functional, and activity-based level. This risk activity is enabled by our Risk Policy, Framework, Methodology and Processes.

Our Risk System



We have identified seven risk areas that potentially challenge the achievement of organisational priorities and purpose in the next four years. These risks and the specific risk factors that drive them are identified, monitored and treated at multiple levels across the organisation. Members of our Leadership Team provide oversight of the effectiveness of these activities.

Customers, partnerships and collaboration

Central to our ability to deliver on our priorities and impact for the nation are our collaborations and relationships with our customers. We draw upon these relationships to inform our decisions and enable delivery. This includes our relationship with the Commonwealth Government to connect government and industry, and to inform – in an impartial way – public policy. Effectively managing these often complex relationships to deliver value and impact for our customers is a fundamental risk. We do this by supporting collaborative teams to manage technical and scientific risks to achieve customer value and impact delivery. We broaden our horizons by seeking out strategic collaborative partnerships to help deliver science impact through new innovation vehicles such as Data61, the ON program, and the CSIRO Innovation Fund[13].

Maintaining excellent science

We undertake challenging research – often in increasingly complex collaborations with others – with a high inherent technical and scientific risk of failure. These risks are managed through an extensive suite of controls operating at the Enterprise, Business Unit, team, and individual level that provides assurance regarding science integrity.

People and culture

People are at the heart of our capability and capacity to deliver innovative solutions for our customers. We manage risks associated with the development and well-being of our people through a values-based approach supported by processes and initiatives relating to recruitment, learning and development, workforce and succession planning, and staff wellbeing.

Commercial and financial

We recognise that to achieve our purpose our financial position needs to be sustainable over the long term. To create revenue growth we will manage risks associated with entry into new markets and geographies, utilising new business and funding models. We will continue to nurture and grow our new innovation initiatives, Data61, ON program and the CSIRO Innovation Fund[13], and Global Strategy, and support other science areas to diversify their strategies to enable the realisation of strategic priorities, and ensure our long-term viability.

13 CSIRO Innovation Fund 1, LP

GEOFF DUMSDAY AND BRIGIT UNTERWEIGER IN THE FERMENTATION LABORATORY.

Operational execution and delivery

A multitude of operational challenges exist that either individually, or in aggregate, impede our Business Units' ability to deliver customer value and impact. Leveraging and improving systems to better capture customer opportunity, project and delivery information, and our strategies to understand customer perceptions and requirements helps us increase impact and value creation.

Health, safety and environment

Conducting research and related activities carries a high inherent risk to the health and safety of people and the environment, including bio-security. Safeguarding the health, safety and wellbeing of our people, our partners, and the communities and environment in which we operate is paramount to our ability to achieve impact for the nation. We manage these risks to a level which supports our aspiration of zero harm; and we have no tolerance for actions that endanger workplace safety.

Governance and compliance

Good governance is critical to our success as an applied research organisation tasked with conducting world-class science for the benefit of Australia and supporting the next generations of science talent. It ensures the effective and efficient processes and behaviours that support accountable, transparent, inclusive and informed decision making. In a large, complex and distributed organisation such as ours, the need for governance and compliance issues to become manifest is inherently high.

This risk is managed across all levels of the organisation by establishing rigour in our scientific processes, effective governance processes to ensure transparency of decision making, financial management practices to ensure efficient use of resources, and values-based engagement and commercial dealings with customers and stakeholders. We recognise our obligations as a government entity conducting a broad range of activities across multiple highly regulated environments. Compliance risk is managed systematically across Business Units; and is enabled and supported by Enterprise Support Service functions.

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