The challenges and opportunities
CSIRO’s 2015-20 strategy must respond to

Macro-environment and economy

1. **Australia’s innovation dilemma**; a systemic challenge in translating innovation inputs to outcomes, constraining productivity performance. 10th in the world for innovation inputs, 22nd for innovation outcomes, 81st for innovation efficiency (Global Innovation Index).

2. **The digital revolution**; information intensive science, systems and industries transforming everything. Massive increases in the volume, value, velocity of data, the power of digital platforms and capacity for insight from cosmic to atomic scale.

3. **Global change, integration and interdependence**; of human and environmental systems, science, commerce and innovation. Increasing risk and opportunity. Shift of economic, social and environmental influence towards Asia and developing economies.

4. **Collaborative innovation**; shift to networked and global innovation models, customer supply choices and global competition goes up. Requires effective models for market vision, multi and inter disciplinary research and capability integration.

Policy alignment

5. A changing Australian economy requiring new growth engines; priority industry growth centre opportunities in advanced manufacturing, food and agribusiness, medical technologies and pharmaceuticals, mining equipment, technology and services, oil, gas and energy resources.

6. Responding to national research priorities; in food, soil and water, transport, cybersecurity, energy, resources, advanced manufacturing, environmental change and health.

Return on Investment to Australia

7. **Differentiated value**; CSIRO delivering on a focused, valuable and differentiated mission in Australia’s innovation system, improving the effectiveness of the whole.

8. **CSIRO Business model challenges**; including long term pressure on direct government funding, low margin contracts, lack of flexibility, unsustainable and unfit property footprint contributing to high overhead costs.
Australia’s Innovation catalyst: Boosting Australia’s innovation performance
CSIRO strategy: 2015-2020

Our mission: create value for customers through innovation which delivers positive impact for Australia

### National challenges and opportunities we focus on

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### Digital Australia

- Astronomy and Space Science
- Australian Animal Health laboratory
- National Research collections
- Marine National Facility
- National Computing Infrastructure

### What we do

- Projects & Teams
  - Creative, entrepreneurial, collaborative teams tackling big challenges through science, technology & innovation
- Customer value
  - Delivering value through innovative solutions for customers in industry, government & community
- Impact delivery
  - Creating new economic, environmental and social impact for Australia

### Strategic Actions

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

### Measuring Performance

- Boosting Australia’s innovation outputs and efficiency performance*
  1. Impact return on investment
  2. Customer satisfaction
  3. Collaboration (Internal and external)
  4. Active licenses
  5. External revenue
  6. People – diversity
  7. People – engagement and innovation culture
  8. People – health & safety
  9. Investment in future science & technology

* Based on a subset of WEF, OECD and Global Innovation Index measures

### One CSIRO functions

Enterprise infrastructure
CSIRO’s Business Units and Impact Goals

**Agriculture**
Deliver transformational positive impact on the productivity, profitability and agro-ecosystem health for Australia’s agri-food and agri-fibre industries and to partner globally towards food security in a resource and climate challenged world.

**Energy**
Deliver by 2030 technology options and science that will enhance Australia’s economic competitiveness and regional energy security while enabling the transition to a lower emissions energy future.

**Biosecurity and e-Health**
Deliver technologies and services which increase the productivity and effectiveness of Australia’s health and biosecurity systems. (Bringing together Biosecurity, AAHL and e-Health and connecting to Food and Nutrition and Biomedical Manufacturing)

**Food & Nutrition**
Maximise Australia’s food, agribusiness and health related value chain opportunities by creating innovative products, processes and services for domestic and premium export markets.

**Land & Water**
Science that directly contributes to the sustainable development and stewardship of land, water, ecosystems and communities, valued at over $12 billion per annum in triple bottom line benefits by 2025.

**Manufacturing**
By 2030 we will develop the 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 by >$10bn.

**Minerals**
Science and technology options for the discovery and efficient development of Australia’s mineral resource endowment that lead to $1 trillion in-situ value by 2030 and enable flow-on benefits to the wider national economy.

**Astronomy and Space Science** - World leaders in astro-science, technology and operations

**Australian Animal Health Laboratory** - Protecting Australia

**Australian National Research Collections - Securing our biodiversity future**

**Marine National Facility - Supporting, enabling and inspiring marine science**

**National computing - High performance innovation**

**Digital Australia**
A digital innovation powerhouse for Australia enabling digital transformation across Industry, Government and Research

**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.**

**Global**
Delivering connectivity to the global science, technology and innovation frontier and new customers and markets for Australian innovation and national benefit

**CSIRO Services**
Delivering effective and efficient innovation enabling businesses including Education, SME-Engagement, Infrastructure Technologies, Publishing and Futures.
To ensure we create deeper innovation relationships with our customers and we are prioritising the highest value investments, we will:
1. Continually develop and improve the end to end customer experience, and our capacity to deliver innovative solutions to customers
2. Embed a rigorous impact & investment planning, monitoring and evaluation framework into our business and employ it to continually optimise our portfolio
3. Deliver and act upon market and technology roadmaps to support national challenges and industry innovation

To ensure that we can integrate the best solutions for our customers, increase our flexibility and enhance Australia’s innovation performance, we will:
1. Increase our contribution to the mobility and exchange of people and know how between research, industry and government
2. Deepen our partner relationships with universities and other research organisations to access a broader pool of external capability
3. Develop a more compact, vibrant and efficient property footprint through capital city consolidation and increased co-location
4. Increase our engagement in education and training from school age to PhD level to help build and equip Australia’s future science, technology, engineering and mathematics (STEM) and innovation capable workforce

To deliver connectivity to the global science, technology and innovation frontier and new customers and markets for Australian innovation and national benefit, we will:
1. Accelerate our overall rates of international engagement, operations and collaboration where there is a higher potential impact value return to Australia than available domestically
2. Prioritise 3 key regions for sustained presence and development where there is a clear intersection with our impact objectives and sustainable business opportunity

To increase our capacity to help reinvent existing industries, and create new industries for Australia and deliver public good, we will:
1. Implement an innovation program, CSIRO ON, and new venture funding models to accelerate our entrepreneurial capacity and provide new models for our customers to adopt technology and knowledge
2. Deepen our direct support for Australian technology start-ups and SMEs in areas of national growth priority
3. Create a world class digital innovation capability for Australia
4. Support, develop and incentivise our people to take commercial and scientific risk, tolerate positive failure and promote a learning culture

To ensure we are creating breakthrough technology and knowledge, and are a trusted advisor for Australia, we will:
1. Increase the value from and investment in a portfolio of Future Science Platforms with higher technical risk and the potential to help reinvent and create new industries for Australia
2. Continue to ensure our brand is a guarantee of the highest quality scientific standards and trusted advice

To enhance our agility, financial sustainability and capacity to respond at the speed of business, we will:
1. Enhance our competitiveness, capacity and return on investment through growing our overall external revenue ratio, revenue from non-Government customers, and reduce our indirect costs
2. Continually streamline and improve our processes and systems to support efficient and effective commercial engagement and project delivery
3. Continually increase the transparency, availability and utility of relevant information through whole of CSIRO knowledge management systems

To fully enable and support the innovation capacity of our creative people and teams to take risk and deliver to customers, we will:
1. Promote inclusion and diversity as a key driver of innovation, specifically increasing gender and cultural diversity in leadership positions over the strategy period
2. Empower frontline teams with autonomy, performance & accountability - maximising frontline capacity for action and providing clear performance goals
3. Promote seamless collaboration across boundaries internally
4. Promote a culture of open sourcing, information sharing and transparency of decision making

To enhance staff safety and wellbeing and to further our aspiration towards zero harm we will:
1. Continue to equip our people with the knowledge and skills to support the physical and psychological health of their teams across a diverse range of operating environments, build a culture of active engagement with and learn from our staff and customers and provide efficient safety systems Sustainability; reduce waste, water use and emissions from our operations, and provide science that supports the Australian community to protect the environment and its living resources
Our CSIRO
Our strategy
Our future

Thank you
Our Future World – 2015 revision
Global Megatrends shaping Australia’s future

1. MORE FROM LESS
   Innovation in meeting human needs by more efficient use of mineral, water, energy and food resources in light of escalating demand and constrained supply.

2. PLANETARY PUSHBACK
   Changes in earth systems from the global to microbial are creating challenges for humanity including climate change and antibiotic resistance.

3. THE SILK HIGHWAY
   Rapid growth of emerging economies and the transition from industrialisation into technologically advanced service sectors.

4. FOREVER YOUNG
   The rise on the ageing population, retirement savings gap, lifespans, healthcare expenditure, diet & lifestyle related illness and mental health awareness.

5. DIGITAL IMMERSION
   The exponential growth in computing power, device connectivity, data volumes, internet users, artificial intelligence and technological capabilities.

6. POROUS BOUNDARIES
   Changes in organisational models, governance systems and employer-employee relations in a more agile, networked and flexible economy which breaks through traditional boundaries.

7. GREAT EXPECTATIONS
   The rise of the all important experience factor as society and consumers have rising expectation for personalised and positive experiences involving social interaction, morals & ethics and the physical world.

The innovation imperative
rising importance of science, technology and innovation in an interconnected world of accelerating and disruptive change