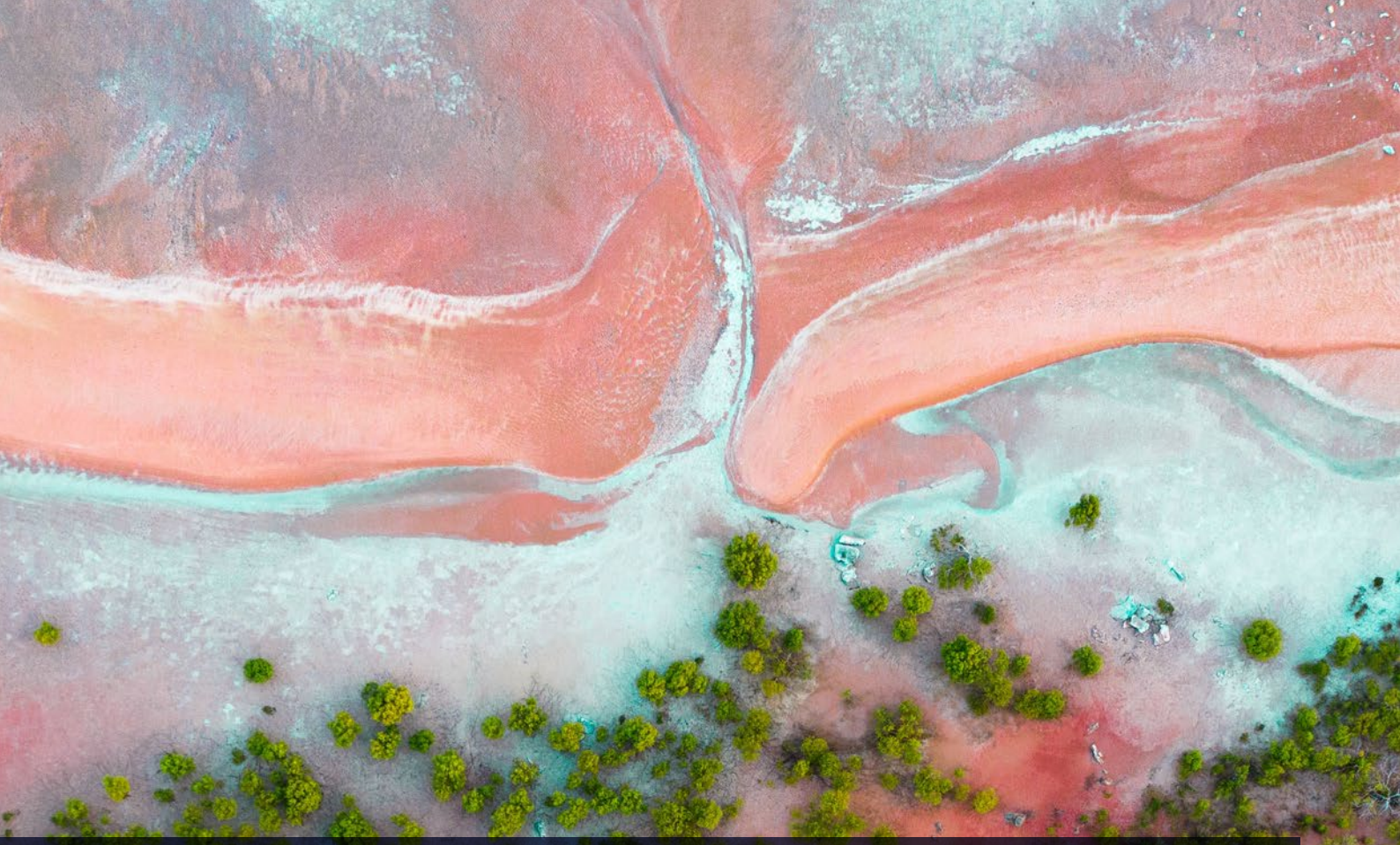
GOVERNMENT OF WESTERN AUSTRALIA

Department of
Jobs, Tourism, Science and Innovation

Western Australia's Research and Capability Priorities

Supporting our 10-Year Science and Technology Plan 2025-2035



Acknowledgement of Country

The Department of Jobs, Tourism, Science and Innovation acknowledges Traditional Custodians throughout Western Australia and their continuing connection to the land, waters and community. We pay our respects to all members of Aboriginal and Torres Strait Islander communities and their cultures and to Elders past and present.

Acknowledgements

The Western Australian Government acknowledges and thanks the many stakeholders who have contributed to the 10 Year Science and Technology Plan, including members of the Advisory Group, Working Group and the many researchers and thought leaders who volunteered their time to support the development of the plan.

For more information, contact the **Science and Technology** division at the Department of Jobs, Tourism, Science and Innovation science@jtsi.wa.gov.au

Western Australia's 10 Year Science and Technology Plan

Linkages between research priorities and other Government activity

Cover image: Corymbia ficifolia, Red Flowering Gum. CREDIT: Western Australian Biodiversity Science Institute

Roebuck Bay, Broome. CREDIT: Tourism Western Australia

Contents

Boodja Gin, Harris River Estate, Western Australia. CREDIT: Frances Andrijich and Tourism Western Australia

Focus areas for research and development efforts:

1. Clean energy and decarbonisation
2. Environment and sustainability
3. Mineral supply and value-adding
4. Health and wellbeing
5. Sustainable and secure food production
6. Critical and emerging technology

Research and capability priorities

Western Australia's 10-Year Science and Technology Plan identifies six key areas to focus research and development efforts:

1. Clean energy and decarbonisation
2. Environment and sustainability
3. Mineral supply and value-adding
4. Health and wellbeing
5. Sustainable and secure food production
6. Critical and emerging technology.

These areas have been identified through extensive consultation and respond to the opportunities and complex challenges that face Western Australia in the coming decades. They aim to:

» capture unique opportunities for Western Australia

» encourage strategic investment in science and technology capabilities

» elevate Western Australia's research performance

» contribute to a diversified economy

» aid decarbonisation

» address social challenges.

While the focus areas have global relevance, specific research priorities have been identified within each area. They also identify areas where Western Australia can contribute to the broader national priorities, including through initiatives such as the National Reconstruction Fund and Future Made in Australia.

CREDIT: Department of Biodiversity, Conservation and Attractions

1. Clean energy and decarbonisation

Western Australia will be a leader in clean energy and green technologies.

Low emission energy

The global push to decarbonise has accelerated demand for secure, low emission energy sources. These include hydrogen, advanced bio-fuels (renewable diesel and sustainable aviation fuel) and synthetic fuels which are scalable and versatile energy sources to reduce emissions. Research and development in these areas has the potential to revolutionise existing energy systems supporting the decarbonisation of heavy industry.

Capabilities and opportunities

Western Australia largely imports knowledge and technology to support traditional renewable energy generation, such as solar and wind. However, the State has an opportunity to become a global leader in the production, use and exportation of renewable hydrogen, products and technologies.

The Western Australian Government's established strategy positions the State to leverage Commonwealth funding available through the Future Made in Australia Innovation Fund and associated schemes, such as hydrogen production tax credits and the Hydrogen Headstart program. There is also the opportunity for Western Australia to produce innovative renewable and synthetic fuels to support decarbonisation of industries highly reliant on diesel fuel.

Priorities for Western Australia include renewable and synthetic fuel and renewable hydrogen:

- » production methods
- » uses in hard to abate sectors and applications: mining, transport, agriculture and remote applications
- » export and value chains.

Carbon capture, utilisation and storage and biosequestration

Efforts to reduce greenhouse emissions through electrification and renewable energy alone will not be enough to reach the State's net zero ambitions. Western Australia's harder to abate industries and geographic characteristics pose challenges for decarbonisation. This makes carbon capture utilisation and storage (CCUS), regenerative agriculture, reforestation and blue carbon important elements of the energy transition.

Capabilities and opportunities

Western Australia has outstanding opportunities to leverage its unique geology, technological expertise and existing infrastructure to develop carbon capture and storage capabilities and nature-based carbon sequestration. Legacy waste streams from the State's mining industry provide an opportunity to permanently sequester CO_2 at the gigatonne scale using ex-situ mineral carbonation technology. There is potential to create CCUS hubs which could attract significant overseas investment and

Fluid Science and Resources Research Group at The University of Western Australia.
CREDIT: UWA

generate thousands of jobs[i]. There is a significant opportunity for the State to be a global player in novel uses of captured carbon, including synthetic fuels.

Priorities for Western Australia include:

- reducing the cost of carbon capture, utilisation and storage methodologies
- novel emission utilisation, including e-fuels and materials
- mineral carbonation applications
- nature-based solutions for carbon sequestration.

Advanced energy storage

Batteries and advanced energy storage technologies are essential to the energy transition. They facilitate the integration of renewable energy sources into the grid, storing excess energy for use during periods of high demand, reducing the congestion in our electricity networks and enabling fully renewable off-grid environments. Additionally, batteries are an integral part of electric vehicles and residential storage of solar generated power, all of which reduce greenhouse gas emissions.

Capabilities and opportunities

Western Australia is a key player in global battery and critical mineral supply chains and has considerable research capacity in extractive metallurgy, power engineering and cybersecurity. This positions the State well to expand battery mineral, chemical, material, manufacturing and recycling opportunities for the use and re-use of battery systems.

Through our learned experiences in remote mining and delivering low cost, reliable energy to remote communities, Western Australia has built a deployment capability critical to facilitate uptake of energy storage in rural and remote regions. These capabilities position the State to develop a resilient and internationally competitive industry supporting decarbonisation and economic diversification. There is also a significant need for long duration energy storage and the State has an opportunity to become a leader in this field.

Priorities for Western Australia include:

- production of battery chemicals
- long-duration energy storage technologies.

2. Environment and sustainability

Western Australia will foster world-leading research to support evidence-based adaptation and conservation of our local ecosystems.

Conservation, restoration and discovery

Effective natural resource management helps to conserve the environment, protect biodiversity, promote healthy ecosystems and combat the impacts of climate change. It assists in the preservation of cultural heritage and connections to Country for Aboriginal peoples. Science and technology are needed to support evidence-based decision-making about conservation, restoration and the management of resilient ecosystems to combat ongoing degradation.

Capabilities and opportunities

Western Australia has strong research capabilities in biodiversity, marine science and restoration ecology. These capabilities can be leveraged to position the State as a leader in the field while allowing us to capitalise on emerging economic diversification opportunities arising from restoration and blue economies.

Western Australia's incredible biodiversity and high rate of species discovery also provides unique opportunities for researchers and businesses to identify compounds of value that can be used to make innovative products. Collaboration with Aboriginal communities on Traditional Knowledge about the State's flora and fauna into research can further enrich this discovery and commercialisation process.

Priorities for Western Australia include:

- biodiversity and conservation
- restoration ecology
- biosecurity and management of pests and diseases
- biodiscovery.

Climate mitigation and adaptation

Climate change is causing unprecedented disruption of the State's ecosystems. These changes are having a considerable impact on Western Australians, particularly in regional and remote communities. It effects cultural practices and the deep cultural and spiritual connections to Country held by Aboriginal peoples, with Aboriginal peoples disproportionally impacted by climate change[ii]. Evidence-based climate adaptation is essential to mitigate the considerable financial and social costs of climate change.

Capabilities and opportunities

Western Australians have been dealing with harsh climates for thousands of years. We can learn from Aboriginal peoples and their long-standing connection to Country and support climate adaptation led by Aboriginal peoples through regionally focused two-way dialogue. There is an opportunity to leverage the State's existing investment in climate projections and research capabilities to address the impacts of climate change and plan for the future.

Priorities for Western Australia include:

» understanding the current and future impacts of climate change

» evidence-based climate action

» development of climate adaptation measures in partnerships with Aboriginal peoples and the broader community.

Water security

Climate change is having a significant impact on water security with Perth and the South-West seeing a 20% decline in rainfall over the past 50 years, representing one of the most rapidly drying climates in Australia and globally[iii]. Decreased flow of rainwater into dams has resulted in increased need for desalination and pumping from aquifers. The rate of sea level rise is also accelerating, amplifying the risks of coastal erosion, inundation and saltwater intrusion into groundwater systems. These issues pose significant risks to the population as our water needs continue to grow and have considerable impact on industry.

Capabilities and opportunities

Western Australia is one of the world's regions significantly affected by climate change and, as such, is an ideal location to research, pilot and implement emerging water saving innovations. The State already has key strengths in this area, including in well-established science programs that increase water use efficiency of agricultural production systems and monitor rivers and estuaries. Western Australia has been the first Australian jurisdiction to implement groundwater replenishment.

Priorities for Western Australia include:

» drought resilience

» water sensitive cities

» sustainable desalination

» methods and utilisation of recycled water.

Ngurrangga Tours, near Karratha. CREDIT: Tourism Western Australia

Recycling for a circular economy

Waste can have a significant impact on the environment and public health through greenhouse gas emissions, pollution, biodiversity loss and resource depletion. Western Australia can no longer rely on exporting waste for processing. Transitioning to a sustainable, low-waste, circular economy will create opportunities for local businesses, support jobs and minimise unnecessary transport of waste. Strong science and innovative new technologies will be required to facilitate this transition.

Capabilities and opportunities

The Western Australian Government is prioritising a transition to a circular economy[iv]. The State has a strong policy environment focused on reducing household waste, but there is a significant need to build local capability in science and technology to support the circular economy and the net zero transition for manufacturing and industry development. This aligns with the Australian Government's approach to waste management and provides further opportunities for Western Australia to leverage national investment[v].

Priorities for Western Australia include:

- management and local processing of recyclable materials
- improving battery recycling methods.

Recycling supports a circular economy. CREDIT: Department of Water and Environmental Regulation

3. Mineral supply and value-adding

Western Australia will grow its science and technology capability to be a global leader in the supply of minerals.

Mineral exploration and characterisation

Mineral exploration plays a vital role in global decarbonisation by facilitating the discovery and extraction of critical resources necessary for renewable energy technologies and sustainable infrastructure. Improved characterisation of mineral resources and developing advanced exploration techniques will be essential for continued discovery of mineral deposits.

Capabilities and opportunities

The Western Australian Government's Geological Survey of Western Australia provides world class data and information to support mineral exploration and optimise discovery. It stimulates greenfields resource exploration through the Exploration Incentive Scheme. The Western Australian Government has also invested in the WA Array project to help geoscientists identify new prospective mineral deposits.

Western Australia is also home to the MinEx Cooperative Research Centre which focuses on the development of new drilling technologies and collection of data to assist with the discovery of major, new mineral deposits. Western Australia can use its long-standing experience in mineral exploration and characterisation to drive further growth in the sector. Additional opportunities are also provided by the significant investment being made in this area by the Australian Government.

Priorities for Western Australia include:

- » developing innovative mapping tools and methodologies
- » geoscience and mineral systems
- » innovative use of data and digital technologies.

Precision and low impact extraction

As minerals are pivotal to the energy transition, minimising the emissions-intensive nature of their extraction, concentration and processing is crucial. There are opportunities to utilise ongoing advances in mining technology to improve efficiency and mitigate the environmental footprint of extraction methods. This will also support the effective utilisation of tailings and waste.

Capabilities and opportunities

Western Australia is a leader in mining engineering and technology and has well established research capability. The Curtin University WA School of Mines is ranked second in the world for Mineral and Mining Engineering[vi]. These capabilities can be leveraged to improve the efficiency and sustainability of mineral extraction in the State.

Port of Dampier. CREDIT: Pilbara Ports

WA Array. CREDIT: Department of Energy, Mines, Industry Regulation and Safety

Priorities for Western Australia include:

» deep and complex extraction systems

» innovative mining technologies, including AI and autonomous mining systems

» extraction from low grade ore.

Critical minerals supply

As the world seeks to reduce emissions and mitigate the impacts of climate change, the demand for critical minerals such as lithium, nickel, cobalt, manganese, mineral sands and rare earths is going to increase. Ensuring a secure, stable supply chain of both raw materials and midstream products is vital. Improvement in extraction and processing efficiencies will increase the competitiveness of local projects in a globalised market.

Capabilities and opportunities

It is important to de-risk midstream processing of critical minerals to enable growth and diversification of Western Australian resources and related industries. The Minerals Research Institute of WA (MRIWA) is partnering with Curtin University and CSIRO for the delivery of a cathode precursor production pilot plant, intended to be the cornerstone of a larger critical minerals advanced processing common user facility. Western Australia's success in the midstream sector has created opportunities to advance local downstream industries, including the processing of minerals and manufacturing of battery components. There are also opportunities to capitalise on Australian Government initiatives, such as the National Battery Strategy and critical minerals production tax credit.

Priorities for Western Australia include:

» rare earth element separation

» high purity metal refining

» advanced materials manufacturing.

Value-added processing

Increasing onshore processing of raw materials to higher-value products, expanding advanced processing capabilities and creating 'midstream' industries will add significant value to Western Australian exports. Complex and low grade orebodies, combined with higher energy costs, are driving the development of new and innovative methods to transform low value deposits into higher value products.

Capabilities and opportunities

Combining the existing mining sector with clean energy production presents a transformative opportunity for Western Australia, including through integrating sustainable energy sources to minimise production and transportation costs and foster innovation for a greener future. The State is well placed to capitalise on our significant iron ore industry and emerging hydrogen and renewable energy industries to support the production of green metals such as iron and steel.

Priorities for Western Australia include:

» physical and chemical processing of minerals

» green metal production.

4. Health and wellbeing

Western Australia will build new knowledge about health and diseases and translate this into improved community outcomes.

Regional, remote and Aboriginal health

Western Australia's expansive geographical area creates challenges in providing healthcare to all communities. With the State spanning over 2.5 million square kilometres, it is the largest area in the world covered by a single health authority. People living in rural and remote areas generally experience poorer overall health compared to metropolitan areas[vii]. It is also well documented that Aboriginal Australians experience poorer overall health and wellbeing, access to education, community connection and support systems than non-Indigenous Australians[viii]. The rapidly changing technological environment provides an unprecedented opportunity to think innovatively about how healthcare is delivered in regional and remote communities.

Capabilities and opportunities

Western Australia has extensive expertise in remote operations and autonomous systems. This presents world-leading opportunities for technology transfer. The State also has growing capabilities in telehealth, tele-trials and digital innovation, including HIVE, Western Australia's first inpatient remote monitoring service. These capabilities can be leveraged to improve care delivery in regional areas and support Western Australia's Sustainable Health Review and the National Agreement on Closing the Gap. They also provide commercial opportunities to create health monitoring services and products.

Priorities for Western Australia include:

- » remote and autonomous system applications in healthcare
- » digital health and tele-trials
- » Aboriginal health.

Precision health

Precision health uses emerging technologies to enhance disease prevention, early detection and improve patient outcomes by tailoring treatments to patients' individual profiles. It has enormous potential to shift a health care system to become more precise and deliver a personalised approach at the individual and population level.

Capabilities and opportunities

Western Australia's precision health infrastructure and research capabilities are well established across universities, hospitals and medical research institutes. These organisations produce world class interventions including precision diagnostics, cell and tissue therapies, implant technologies and preconception carrier screening. This includes The Kids Institute, Harry Perkins Institute of Medical Research, Lions Eye Institute, Perron Institute, the Rare Care Centre and the Australian National Phenome Centre.

Priorities for Western Australia include:

» diagnosis and treatment of rare diseases

» omics healthcare

» precision diagnostics

» precision health for cancer treatment.

Disease prevention and community resilience

Understanding health protection and disease prevention is key to helping Western Australians live healthier lives and reduce the burden on the healthcare system. Evidence-based public health initiatives, across environmental health, communicable disease and chronic disease prevention, are critical to support healthy communities and are prioritised in Western Australia's Sustainable Health Review.

Capabilities and opportunities

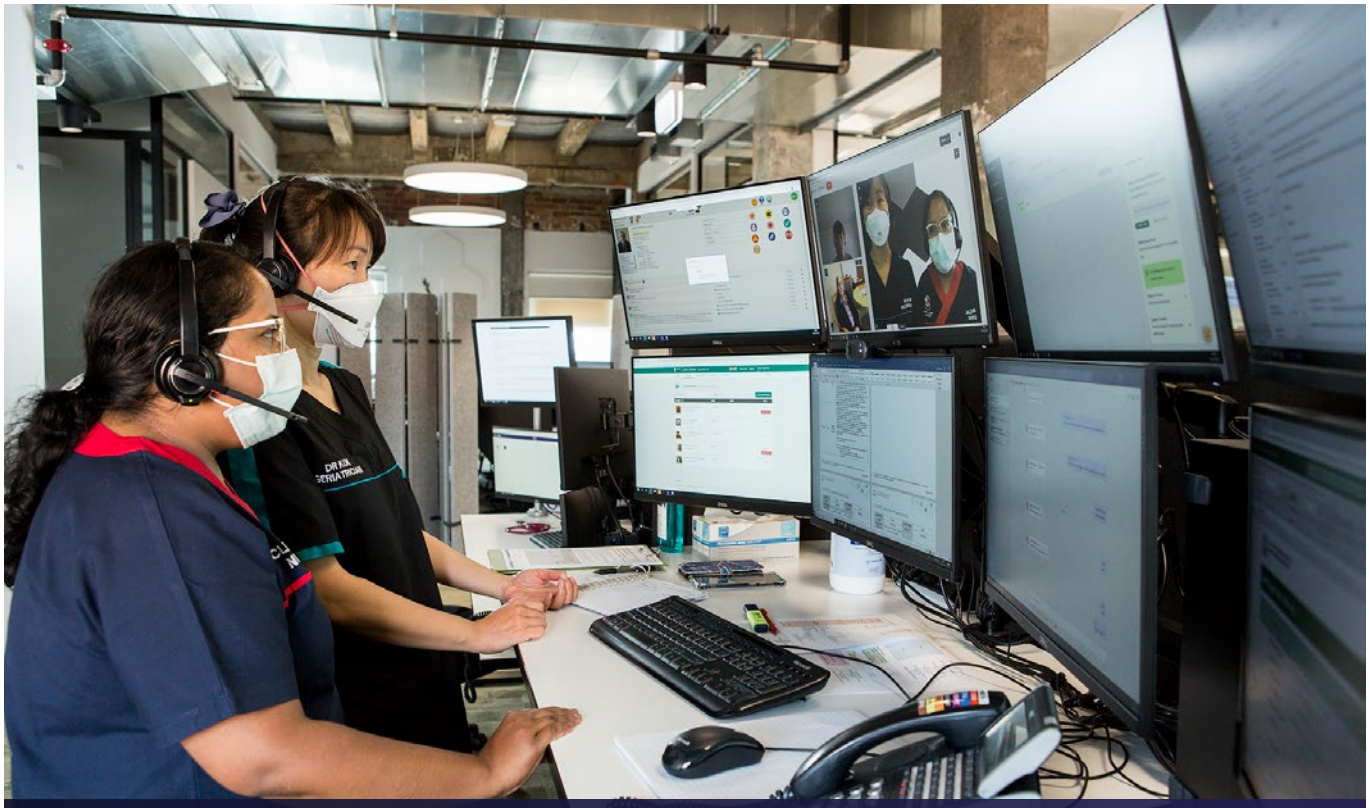
Knowledge of health across lifespans is key to understanding and supporting the prevention of disease. Western Australia is home to some of the largest and longest running population health cohort studies in the world; The Raine Study and the Busselton Health Study. These studies, along with the ORIGINS Project, provide a strong evidence base of population health data to help understand the complex interactions between lifestyle, genetics, environment and health. These data can support decision making, improve quality in local research and attract quality talent to Western Australia.

Priorities for Western Australia include:

» public health and disease prevention

» health data linkage

» social determinants of health.



Royal Perth Hospital (RPH) Health in a Virtual Environment. CREDIT: RPH

5. Sustainable and secure food

Western Australia will be a leader in research and technology development to support sustainable and high value food production.

Climate resilient food production

Improving climate resilient food production is critical to ensure Western Australia can adapt to the impacts of climate change. Our State has an imperative to act now to ensure food security is maintained and export industries are protected. These efforts will help safeguard regional communities and bolster contributions to sustainable, long-term economic growth.

Capabilities and opportunities

Western Australia has world-leading research capabilities in climate-resilient food production. These include dryland farming systems, the development of drought resistant crops, soil management, water efficiency, sustainable livestock and fisheries practices and mitigating biosecurity incursions. Well-established connections exist between government, academia, research development corporations, fishers, farmers and producers, which can be leveraged to further drive performance. There is significant opportunity for a holistic, scientific approach to food production and food security that considers global trends such as changing climate, increased pest risk, dryland salinity and reduced soil fertility.

Priorities for Western Australia include:

» climate-tolerant plants and livestock

» low emissions farming practices

» innovative biosecurity practices.

Land and water optimisation

As Western Australia transitions to a low carbon economy, competition for land and water use is growing rapidly, with demand from various sectors of the economy. Decisions on resource allocation have long-term impacts and need to be informed by research to ensure evidence-based decision making.

Capabilities and opportunities

Western Australia has established research strengths in the field of resource management, including in precision irrigation, land rehabilitation and utilising geospatial and remote sensing tools to monitor land use efficiency. These capabilities can be expanded to manage the balance between conservation, food production, energy production and carbon sequestration.

Priorities for Western Australia include:

» maximising water and nutrient-use efficiency

» water security for food production

» integration of data and technology in resource management.

Bravo apples are a new apple variety created in Western Australia.
CREDIT: Department of Primary Industries and Regional Development

Value-added food supply

Western Australia is internationally renowned for its highly competitive production of premium-quality, safe, and certified raw agrifood and beverage products. Globally, consumer demand is increasing for food and products that meet varied needs. Domestically, there is also a need to ensure equitable access to high quality, nutritious food. This can especially be the case in rural and remote communities that face long sporadic supply chains that add to costs and encourage the consumption of lower nutrient foods that lead to more foodborne illness and chronic diseases.

Capabilities and opportunities

Western Australia has a well-established primary industries sector. However, there is a significant opportunity to add value to local production and respond to emerging trends in global consumer demand. This includes extending the shelf life and nutritional value of food. Western Australia is home to the Food Innovation Precinct, which houses the Sustainable Innovative Food Technologies Centre, and is helping to transform the State's food and beverage manufacturing industry. Other leading research institutes will also play an important role in developing new products for local and overseas markets.

Priorities for Western Australia include:

- manufacturing and value-added food and beverage products of local produce
- innovative and efficient propagation of perishable fresh foods.
- Extending the shelf-life and nutritional value of fresh food.

6. Critical and emerging technology

Western Australia will be renowned for its capability in the development and application of critical technologies.

Remote operations, robotics and autonomous systems

Remote operations, automation and robotics are set to fundamentally transform sectors and economies. Autonomous robotic technologies increase workforce productivity and safety and are particularly important for industry development, production and service delivery in regional areas. There are widespread opportunities to unlock value through cross-sector applications including in space industries, agriculture, offshore aquaculture, defence industries, advanced manufacturing and health and medical life sciences.

Capabilities and opportunities

Western Australia is a world leader in the application of industrial robotics and automation technology. The Pilbara region is home to almost 75% of the world's autonomous trucks and longest autonomous trains hauling iron ore[ix]. These capabilities have been developed through the space, defence and maritime industries and mining sector and can be further leveraged to provide solutions across numerous industries.

Priorities for Western Australia include:

- » innovative remote operation services
- » development and testing of automation and robotics products
- » cross sector technology transfer.

Artificial intelligence and cybersecurity

Artificial intelligence (AI) creates the potential for industries to make better products and deliver services in faster, cheaper and safer ways. There is a need to develop local AI capability and support innovative methodologies and applications to ensure Western Australia's industries remain nationally and internationally competitive.

The security of our data and information technology is critical, with increasing malicious cyber-attack attempts on government and private networks. Cyber criminals have disrupted the operation of critical infrastructure and essential services around the world, exposed vast amounts of sensitive information and caused significant financial losses and harm across communities.

Capabilities and opportunities

There are key opportunities for the State to develop knowledge and skills in targeted AI applications. This includes opportunities to utilise AI in healthcare, natural resource management, agricultural production, and shift towards smart cities. Western Australia also has significant data processing capabilities and world-leading research associated with the Square Kilometre Array which can be supported by the utilisation of AI.

Pawsey Supercomputing Research Centre in Western Australia. CREDIT: Pawsey

Western Australia also has strengths in cybersecurity, including being home to Australia's largest cyber security research and education program and one of Australia's largest security operations centres at Edith Cowan University. Additionally, the State has a key role in supporting the advanced cyber capabilities required by the AUKUS partnership. These strengths can be applied to improve the cyber security and resilience of Western Australia's businesses and other entities.

Priorities for Western Australia include:

» innovative AI applications to support other research priorities

» cybersecurity capability and adoption.

Data insights, linkage and optimisation

Connecting multiple sources of information through data linkage creates rich and comprehensive datasets. The insights generated from these datasets can help to improve our response to current and future complex social, health, environmental and economic issues facing the State.

Capabilities and opportunities

The Western Australian Data Linkage System is one of the most comprehensive and high-quality linkage systems in the world and the longest running in Australia. It spans approximately 60 data collections, representing over 150 million linked records and puts Western Australia in a prime position to trial the integration of emerging technologies including AI[x]. Ongoing investment from government, industry and academia in these capabilities is needed to solidify our position as a leader in data linkage and use.

Priorities for Western Australia include:

» data linkage processes

» optimising access to data

» data analysis, including AI applications.

Learning in cyber security lab at Edith Cowan University, Perth. CREDIT: JTSI

Quantum capabilities

Quantum technology is set to revolutionise the way we live and work with vast application across business and industry. There are immense opportunities to leverage these technologies across Western Australia's priority industries, from ultra-secure navigation in defence to enhanced imaging in health. Global investment in quantum technologies is substantial and Western Australia has the opportunity to act now and maintain the State's position and ensure local economies can capitalise on the benefits of these technologies.

Capabilities and opportunities

Building Western Australia's quantum capabilities will be critical to advancing local opportunities for these technologies to revolutionise critical industries and strengthen our economy. Our State is already a leader in quantum research and technology development, supported by well-developed infrastructure and talent including the Australian Research Council Centre of Excellence for Engineered Quantum Systems, Quantum technologies and Dark Matter Lab and the world's first room-temperature diamond-based quantum computer. However, there is the need to grow the sector and leverage the State's involvement in the AUKUS partnership to maximise our opportunities in this field.

Priorities for Western Australia include:

- positioning, navigation, and timing technologies
- quantum sensors, including for resource exploration and processing
- secure communications to support defence and other applications
- quantum materials.

Radio astronomy and space technology

Radio astronomy is a key tool to provide insight into the creation and evolution of the universe. In addition to adding to human knowledge, this research supports innovative scientific and technological applications across a broad range of industries, including defence, space and mining. The unique location and environment of Western Australia has attracted, and can continue to attract, significant international investments to build these forefront capabilities and to provide a home for highly skilled researchers.

Capabilities and opportunities

Western Australia has considerable natural advantages in these sectors. With clear skies and areas of minimal radio interference, our State is well placed for space communication and exploration. Western Australia is home to a growing space industry with more than 70 international and Australian space related companies. The International Centre for Radio Astronomy Research (ICRAR) and Square Kilometre Array are housed in Western Australia. The State now has an unprecedented opportunity to capitalise on its position and support the expansion of these industries, which can lead to innovations that improve environmental and community outcomes, boost productivity and improve our everyday lives. The application of revolutionary technologies for high-data-rate laser communications to low-earth orbit provides Western Australia with unparalleled opportunities to gain a competitive advantage in the multi-hundred-billion international space communications industry.

Priorities for Western Australia include:

- applications of data intensive and data driven technologies across industries
- high bandwidth communications and signal processing for space and ground.

Advanced and additive manufacturing

Technologies and processes such as AI, robotics and 3D printing, have potential to transform manufacturing in Western Australia. New technologies and cross-sector transfer of existing technologies can accelerate our existing competitive advantages in high value export markets. This will provide the benefits of driving productivity and sustainability, diversifying the economy and growing small and medium enterprises across the State.

Capabilities and opportunities

Western Australia has a dynamic and diverse manufacturing sector with an established network of world-leading companies. Our State is home to an abundance of raw materials and has significant local expertise in robotics and automated processing.

Building capability in advanced and additive manufacturing is critical to increasing the competitiveness and value-adding potential of Western Australia's export industries. It can also improve the efficiency of local construction activity, such as the production of modular homes. It will allow Western Australia to accelerate growth, diversify the economy and support national security and resilience.

Priorities for Western Australia include:

» robotics

» capabilities to support other priorities, including synthetic fuel, renewable hydrogen and critical mineral processing.

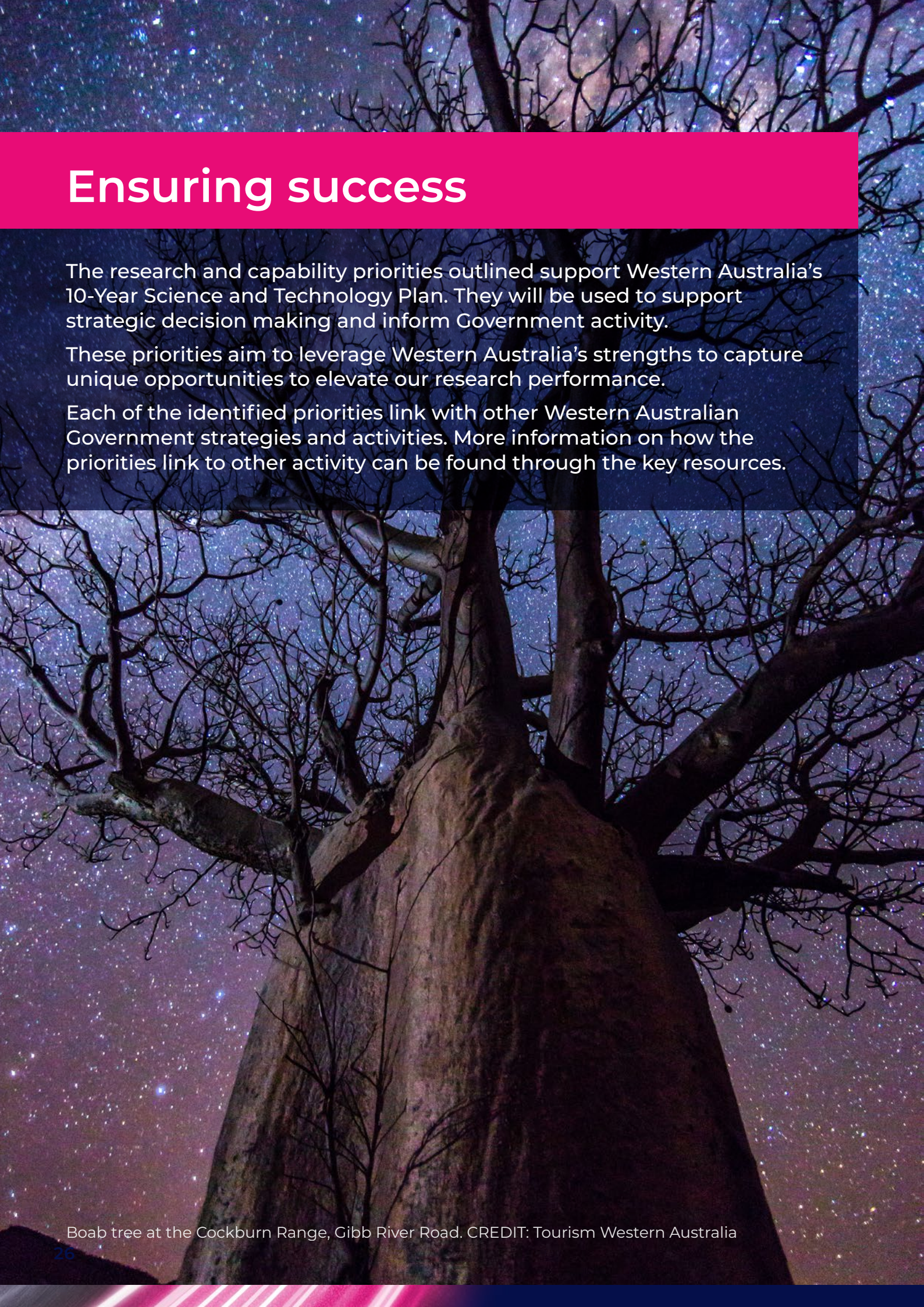
CREDIT: South Metropolitan TAFE

Ensuring success

The research and capability priorities outlined support Western Australia's 10-Year Science and Technology Plan. They will be used to support strategic decision making and inform Government activity.

These priorities aim to leverage Western Australia's strengths to capture unique opportunities to elevate our research performance.

Each of the identified priorities link with other Western Australian Government strategies and activities. More information on how the priorities link to other activity can be found through the key resources.



Boab tree at the Cockburn Range, Gibb River Road. CREDIT: Tourism Western Australia

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Western Australia's Research Priorities support numerous government strategies, a full list can be found online

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