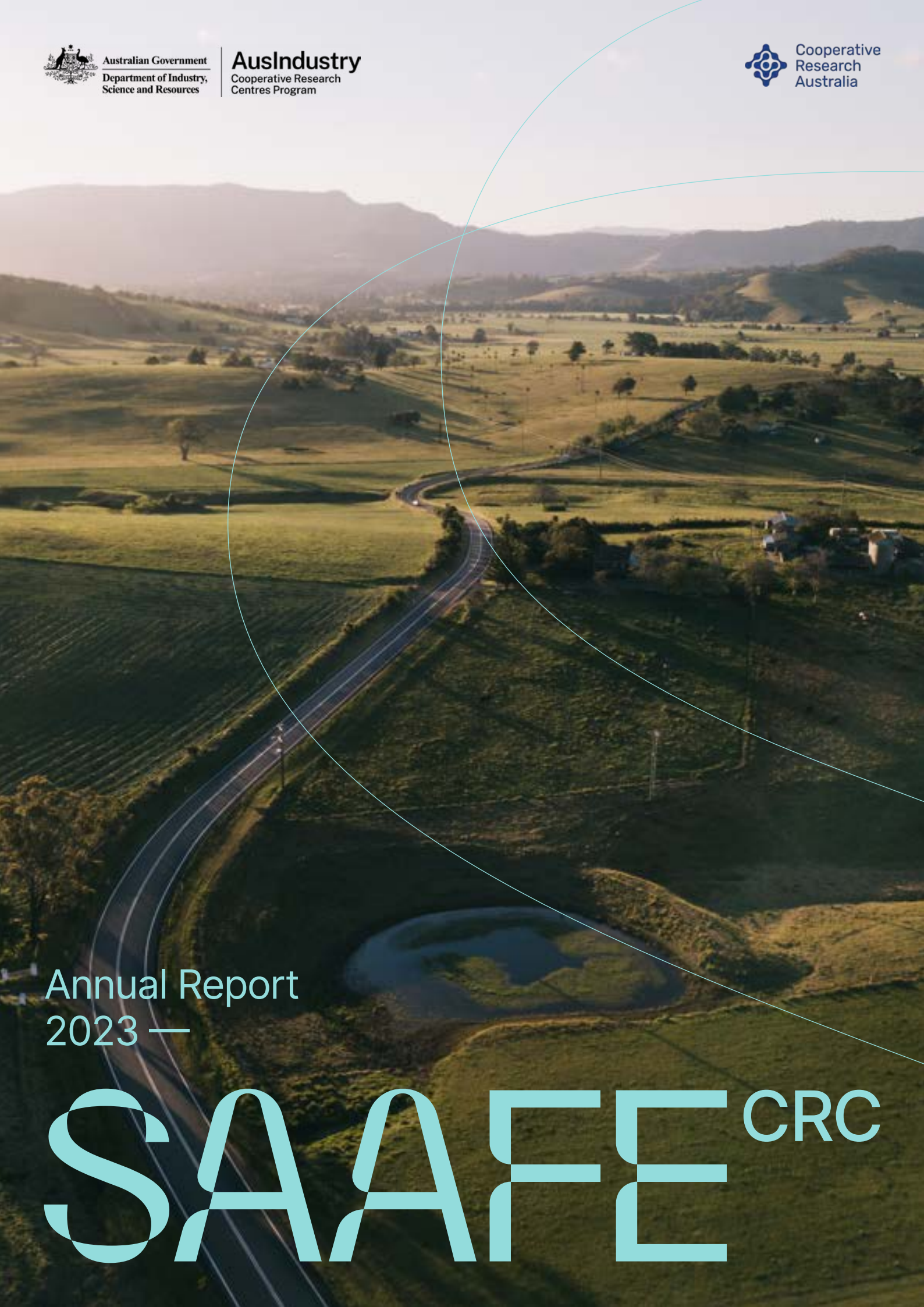
Australian Government
Department of Industry, Science and Resources

AusIndustry
Cooperative Research Centres Program

Cooperative Research Australia



Annual Report 2023 —

SAAFE CRC

Contents

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Department of Industry, Science and Resources

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Cooperative Research Centres Program

This project received grant funding from the Australian Government through the CRC Program.

Welcome to the SAAFE CRC Annual Report

Acknowledgment of Country

SAAFE acknowledges the Traditional Custodians of the lands, seas and waters of this Country, and of all areas in which we live and work across Australia.

We respect Aboriginal and Torres Strait Islander Peoples' deep cultural and spiritual relationship with this land and pay our respects to Elders past and present.

We acknowledge the diversity of Aboriginal peoples and their knowledge systems. We recognise the concept of One Health (which highlights the integrated nature of human, animal, plant and environmental health) is not something new to Aboriginal peoples, and that embracing this knowledge and connection to Country is a vital step in the path to reconciliation.

SAAFE is respectfully committed to a research program underpinned by the core value of Caring for Country.

A message from The Hon. Karlene Maywald, SAAFE CRC Chair

Welcome to the first Annual Report of Australia's Cooperative Research Centre for Solving Antimicrobial Resistance (AMR) in Agribusiness, Food and Environments (SAAFE).

AMR is a serious global threat to water quality, food safety and security, and agriculture productivity, but it can be mitigated through sufficient investment, stewardship and collaboration.

To tackle AMR, we will need to respond in collaborative and collective ways like the world has never seen before. Resistant disease affects humans, animals and plant health, and is a biosecurity and trade risk. AMR does not respect the boundaries in which policy makers live, so we must break free of the silos that prevent us from acting collectively in the interests of us all.

Collaboration is what underpins SAAFE – a world first consortium that will invest more than $150 million by 2033 into research to understand and mitigate AMR risks. I am inspired by the SAAFE team's and partners' ability to bring together a wealth of knowledge and highly skilled professionals with a common purpose – to develop and implement novel solutions to tackle AMR.

After a busy and successful 12 months of establishing SAAFE, we are ready to embark on our ten-year journey to find solutions to AMR, an issue which, if not addressed, could wipe up to $283 billion from the Australian economy by 2050.

I am honoured to Chair the outstanding SAAFE Board of Directors. Dr Tony Peacock, John Merakovsky, Scott Ashby, Liz Reily and Julie Orr each possess a wealth of expertise, acumen and strategic insight, ensuring SAAFE's governance is of an exceptionally high standard. They will effectively guide SAAFE in our endeavour to find solutions to AMR.

Our SAAFE research programs are led by renowned experts in their fields, supported and advised by the SAAFE Research Advisory Committee (RAC) of industry leaders. Our Independent Expert Advisory Committee (IEAC) comprises a distinguished and diverse group of international scientific experts who will review SAAFE's research programs and projects, as well as bring the global context to our work.

Critically, SAAFE adopts a One Health approach to tackling AMR, recognising the intimate interconnectivity of human, animal, and environmental health. This holistic approach, and our role in facilitating collaboration between our partners will position SAAFE as a leader in the global fight against AMR.

SAAFE looks forward to continuing to work with our partners to coordinate the AMR response for the Australian agribusiness, food and environmental sectors – and to protect human and animal health, food security and economic prosperity into the future.

The Hon. Karlene Maywald
SAAFE CRC Chair

A message from Alex Lloyd, SAAFE CRC Chief Executive Officer

SAAFE's first year of operations was a big one.

We established our Research Advisory Committee (RAC), our Independent Expert Advisory Committee (IEAC) and SAAFE's Education and Training Program to build capability and capacity to tackle AMR. And we are proud of our world class Research Program leads who have been working with SAAFE since the initial proposal to the CRC Program.

Our first cohort of foundation research projects has all now been established. Nine projects have been approved by the SAAFE board and have either commenced or are in their final stages of contracting. These projects will collectively invest more than $21 million of cash and in-kind into SAAFE's research program over the next few years.

We also began the recruitment process for our first PhD cohort and invited submissions for PhD projects. The Education and Training Program will train and support early career and higher degree researchers beyond the scope of their PhDs, building a cohort of future industry and research leaders (see pg 21 for more information on this program).

A major highlight of 2023 was SAAFE's official launch and first AMR Solutions Summit that brought together more than 200 attendees across our 70 plus forward-thinking research, industry and government partners, and leading national and international AMR experts.

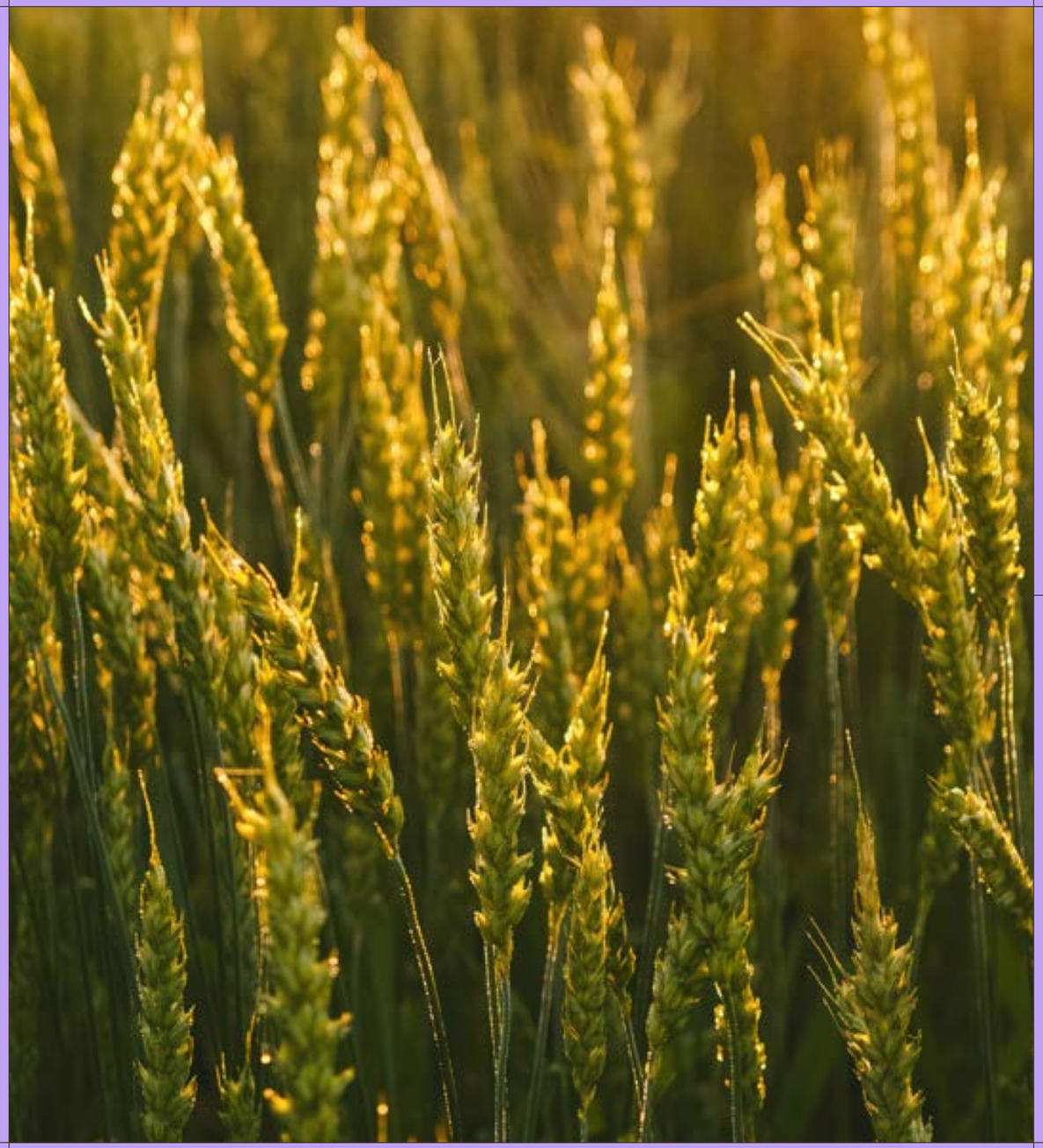
Throughout this establishment process, my team has been fortunate to be supported and guided by an accomplished and experienced board of directors.

After a year of establishment, recruitment and planning, 2024 will see a shift in focus towards seeding, facilitating and fostering collaboration between projects and sectors. Mechanisms for collaboration include the continued recruitment and appointment of the SAAFE Foundation Research Fellows, the establishment of scientific and industry review panels for projects, and the start of a series of initiatives to build connections, share knowledge and outputs between projects, as well as building support for collaborative projects.

In 2024 we look forward to establishing more research projects across our three research programs, building connections between these projects, and communicating our progress through our new monthly SAAFE newsletter, our new website, and our monthly webinar series featuring science and industry expert presentations, as well as regular SAAFE project updates. Don't miss out on our second annual AMR Solutions Summit which will be held at the National Wine Centre in Adelaide 17-18 September.

Alex Lloyd
SAAFE CRC Chief Executive Officer

About SAAFE CRC

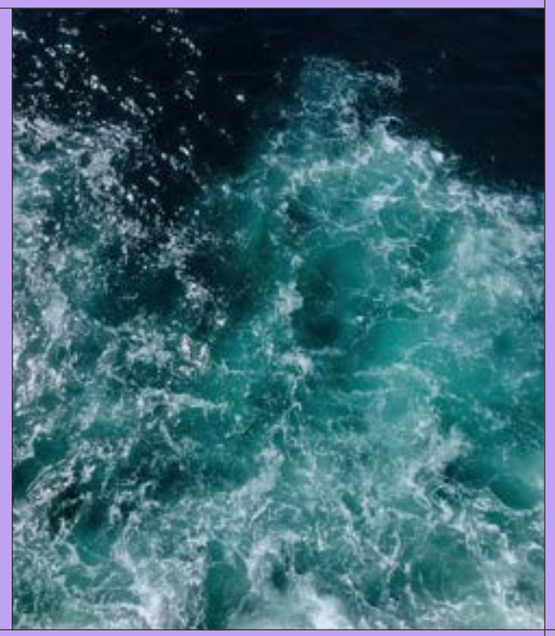


Protecting Australia’s communities, environment and economy from antimicrobial resistance.

SAAFE’s Purpose

Australia’s Cooperative Research Centre for Solving Antimicrobial Resistance in Agribusiness, Food and Environments (SAAFE) is a world-first research consortium that brings together forward-thinking industries with leading research organisations and government agencies to tackle AMR using a coordinated and cross-sectoral approach.

Together, we are committed to protecting Australia’s food and agribusiness industries, and the environments in which they operate, from the growing threat of antimicrobial resistance (AMR).



Our Partners

Working with more than 70 partner organisations that represent diverse areas ranging from viticulture, aquaculture and horticulture, to the water, organic waste, stockfeed and animal industries, SAAFE will, by 2033, invest more than $150M into collaborative research to mitigate AMR, helping partners develop, share and implement solutions.

SAAFE aims to tackle AMR at source across a diverse and complex range of systems and environments.

A One Health approach to AMR sees coordinated action across all sectors where antimicrobials are used.

Australian food and agriculture have a reputation worldwide for premium quality, safety and sustainability. SAAFE will facilitate best practice AMR stewardship in the agribusiness, food and environmental sectors. This will help Australia secure and diversify export markets and strengthen biosecurity. It will also protect human health.

"AMR is the quintessential One Health challenge – the ultimate interrelatedness of human, animal and environmental health. Just as no single industry is solely responsible for AMR, no single industry can solve it alone. That's why the SAAFE consortium includes such a breadth of partners including service providers, technology providers, regulators and end users.

"AMR is a multifaceted problem. In establishing this CRC, we're making sure industry can be directly involved in understanding, managing and mitigating the risks posed by AMR."

Erica Donner
SAAFE Research Director Professor

Our work is underpinned by a One Health approach which recognises the interconnection between people, animals, plants and their shared environments.

What is AMR?

Antimicrobials, including antibiotics, antivirals, antifungals and antiparasitics have been used for decades to prevent and treat infections in humans, animals and plants.

When microorganisms develop antimicrobial resistance (AMR), these drugs and chemicals no longer work. Common infections become much harder – and sometimes impossible – to treat. Humans, animals, and plants are all at risk from AMR.

The Food and Agriculture Organization (FAO), the World Organisation for Animal Health (WOAH/OIE), the World Health Organization (WHO), and the United Nations Environment Programme (UNEP) have jointly appealed to all countries to act urgently on AMR.

The genetic basis of AMR is complex. Once AMR emerges, it can jump from one microbe to another through gene transfer. It can spread through water, waste, feed, food, environments, animals and humans. This means AMR can be transmitted within and between populations and industries.

Antimicrobials are essential for human, animal and plant health. But the more we use them, the more we encourage the development and spread of AMR. This has led to the concept of antimicrobial stewardship: ensuring the appropriate use of antimicrobials to safeguard their effectiveness while reducing the risk of AMR.

Australia has committed to minimising the development and spread of AMR through strategies such as the National Antimicrobial Resistance Strategy – 2020 & Beyond and the One Health AMR Master Action Plan.

Research Director's Report

"As SAAFE's Research Director, I am proud to lead a national consortium of researchers working together with industry and government partners to co-design, develop, assess and implement systems and solutions to mitigate the complex threat of AMR."

Erica Donner
SAAFE Research Director

"Too Big To Fail". That was the World Bank's verdict on antimicrobials after modelling the scale of the AMR threat to global productivity and GDP. This is because the use of antimicrobials underpins national economies, health systems, food safety and food security. They're essential to the world as we know it.

Currently, these "too big to fail" antimicrobial assets remain underappreciated, overused, and at threat, but the world is awakening to the significance of the AMR challenge. Intergovernmental leadership from the One Health Quadripartite (FAO, WHO, WOAH, UNEP), the Global Leaders Group on AMR, and coordinated regional and national initiatives are highlighting the urgency and severity of the AMR crisis and setting the stage for change.

SAAFE has an important role to play, working with industries nationwide to understand the AMR challenge locally, and support Australian companies, decision makers and communities to prepare and respond with a coordinated, collaborative and solutions focused approach.

There is no doubt we need to do everything we can to preserve the life, and livelihood, saving potential of antimicrobials. Yet microbial defence systems are impressive. Challenge them - and they respond. Microbes are incredibly well equipped to evolve, acquire and spread resistance genes. This is why AMR is becoming such a massive challenge. We need to act now and develop, test and implement approaches to better track and mitigate AMR. Potential impacts of unmitigated AMR on industry and communities are far reaching – ranging from treatment failure to production failure, regulatory pressure, trade impacts and export industry disruption.

As SAAFE's Research Director, I am proud to lead a national consortium of researchers working together with industry and government partners to co-design, develop, assess and implement systems and solutions to mitigate the complex threat of AMR.

Collaboration is critical as we seek to support industries, communities and government partners to tackle AMR. Just as no single industry is solely responsible for AMR, no single industry can solve it alone. This is why SAAFE is uniquely cross-sectoral in its partnerships, bringing together stakeholders from the water sector, terrestrial and aquatic animal industries, viticulture, horticulture, broadacre agriculture, organic waste, feed manufacturing, food manufacturing and retail, biotech, engineering, public health and the broader community. This networked approach is key to understanding and addressing One Health AMR in Australia.

As SAAFE enters its second year of operation, I am delighted we have been able to bring together so many industry and government partners to work together on tackling AMR. Our food and agribusiness industries are linked via environmental systems and supply chains, so I spend a lot of my time prioritising and co-designing research with end-users and working out ways to interweave SAAFE's research projects and activities together to achieve maximum impact into the future. Interactions and interdependencies are what it's all about when we look at the drivers and impacts of AMR.

I know we have a lot of work ahead of us, and that it will take collaboration across all parties to tackle AMR, but it's exciting to see SAAFE's first tranche of research projects passing from the co-design and contracting stage into commencement. Some of these are large industry-wide programs, such as our national water industry consortium program, with foundational projects on data systems, monitoring and risk assessment forming a strong and interlinked core research program.

I'm working with SAAFE's new Education and Training Manager, Charlotte Ferrier, to identify SAAFE's first suite of PhD projects and candidates. We will be linking them into these core programs of work, bringing invaluable transdisciplinary research experience and practical industry insights that will repay manifold as they continue to forge their careers in the years ahead.

Once again, my heartfelt thanks to the many people leading action on AMR, and who have supported and enabled SAAFE's establishment.

Research Program

SAAFE's collaborative research program is industry-led and impact-driven. It comprises three cross-cutting and integrated programs.

01 Monitoring

Measuring AMR so it can be managed

02 Analytics

Integrating data to empower better decision making

03 Solutions

Stopping the evolution and spread of AMR

The Monitoring Program

The Monitoring Program, led by Associate Professor Aaron Jex, will build the expertise, platforms and protocols needed to underpin research and surveillance of AMR genes, drivers and organisms' distribution, dynamism and concentration in Australia's drinking, waste and recreational waters, and other industry-specific matrices and products.

Our primary research goals include tracking transmission of AMR organisms through environmental pathways and supply chains, supporting source attribution, risk assessments, and improved management and risk reduction strategies and interventions. We will also develop core resources, including best-practice guidelines, SOPs, method decision matrices and other documentation and expertise to support the development of standardised methods and approaches that can be shared and adopted nationally.

The Analytics Program

The Analytics Program, led by Professor Ricardo J. Soares Magalhães, focuses on secure data integration across food and water value chains to mitigate AMR risks to business and consumers, and providing industry-specific AMR intelligence. This includes integrating digital production data and market data to allow better decision-making in food production, processing, regulation and value chains. We'll be working with partners and agencies to understand the nature of their respective data landscapes, how data is managed day-to-day, and what their needs are. We will develop standards for data governance and management (developing the SAAFE Data Code), and integrated IT systems development and testing to track, manage and mitigate AMR, while supporting interoperability with other relevant national initiatives and systems. AMR data-driven insights and reporting are needed to protect Australia's reputation as a premium, safe food producer, and to secure international market access and growth of food exports.

The Solutions Program

The Solutions Program, led by Professor Andy Barnes, is focused on identifying, creating, testing and improving interventions that mitigate AMR in agribusiness, food, water and waste systems. This includes developing new targeted AMR treatments and alternatives including vaccines and optimised feeds, and engineered solutions to improve water quality and waste treatment, reduce infection and disease, and decrease AMR loads to receiving environments and in value chains. Drawing off the outputs and innovations from the Monitoring and Analytics program, Solutions Program activities include developing best practice guidelines for industry self-regulation and antimicrobial stewardship, and end-user front-end digital technology for improved management of AMR risks. By supporting a broad range of solutions research across industries, SAAFE aims to support effective behaviour change to extend the ongoing effectiveness of critically important antimicrobial treatments.

As part of our work to identify where management actions could be best placed, and to understand the cost ramifications of different management strategies, we will be using a 'Living Labs' approach that allows us to monitor and conduct risk assessments and technology demonstrations and assessments in the 'real world'. SAAFE's Living Labs Program will be led by Professor Nick Ashbolt.

SAAFE Committees

SAAFE's research programs and leads are supported and advised by the SAAFE Research Advisory Committee (RAC), chaired by Dr Barry McGookin (SAAFE's Food Sector Lead). The RAC comprises industry sector leads representing water (Karen Rouse, WaterRA), wine (Liz Waters, Wine Australia), fisheries and acquaculture (Wayne Hutchinson, FRDC), horticulture (Bianca Cairns, Hort Innovation), animal industries (Peter Coombe, AIAS), and animal feed (Duncan Rowland, SFMCA). The RAC gathers and shares sector insights, identifies trends and emerging issues and cross-sectoral opportunities for collaboration, as well as assisting in research needs evaluation, performance evaluation, and the success of key research programs.

SAAFE's International Expert Advisory Committee (IEAC) will comprise eight pre-eminent global research leaders with One Health, AMR or other relevant expertise, each with the ability to bridge scientific, industrial and social policy issues including public health. The committee's primary role is to independently review SAAFE's research activities, outputs and outcomes to ensure quality and progress.

IEAC Chair, Distinguished Professor Ed Topp, is one of the world's leading experts on One Health AMR. We are delighted he will chair the IEAC for an initial term of three years. The IEAC has seven founding members, with one further member to be confirmed.

- Distinguished Professor Ed Topp (ANR/ INSERM Distinguished Research Chair, Priority Research Program on AMR; Research Director, Agroecology mixed research unit, INRAE, University of Burgundy, France)
- Chair Professor Ir. Dr. Tong Zhang (Department of Civil Engineering, University of Hong Kong, China).
- Professor Heike Schmitt (Principal Investigator, RIVM National Institute for Public Health and Environment, Netherlands; Professor, Delft University of Technology, The Netherlands)
- Professor Max Troell (Beijer Institute for Ecological Economics, Sweden, Research Leader, Stockholm Resilience Centre)
- Professor Despo Fatta-Kassinos (Head - Department of Civil and Environmental Engineering, University of Cyprus; Director, NIREAS-International Water Research Centre)
- Dr Ir. Bart Fraaije (Senior Researcher, Biointeractions and Plant Health, Wageningen University and Research, The Netherlands)
- Professor Tom Wittum (Professor and Chair of the Department of Veterinary Preventive Medicine, Ohio State University, USA; UN FAO International Reference Centre for Antimicrobial Resistance, USA)

Other SAAFE advisory committees in establishment include the Policy and Regulatory Advisory Group (PRAG), the Aboriginal and Torres Strait Islander Advisory Committee (ATSIAC), and a Youth Advisory Committee (YAC). Committee members will be selected based on their relevant expertise and activities, while actively considering the need for sectoral, gender and geographical representation.

Research Projects commencing or ready for contracting

MONITORING PRORAM

Project Title: Core Monitoring Capability Project
Proponent: Water RA (Water Industry Consortium)
Lead research provider: WEHI
Timeframe: 48 months – foundational project

Project Title: Advancing diagnostics for monitoring and management of fungicide resistance in grapevine
Proponent: Wine Australia
Lead Research Provider: SARDI
Timeframe: 48 months

Project Title: Improved management of apple scab to reduce pesticide usage and fungicide resistance in Australian orchards
Proponent: WA DPIRD
Lead research provider: Curtin University
Timeframe: 48 months

ANALYTICS PROGRAM

Project Title: Advancing agribusiness digital transformation to prevent pathogen resistance and improve food security
Proponent: ARDC
Lead research provider: UQ
Timeframe: 24 mths – foundational project

Project Title: Understanding AMR risk
Proponent: WaterRA
Lead research provider: UniSA
Timeframe: 48 months – foundational project

Project Title: SA EPA risk assessment and management project
Proponent: SA EPA
Lead research provider: UniSA
Timeframe: 48 months

SOLUTIONS PROGRAM

Project Title: Development and optimisation of Lactococcus garvieae vaccines for Australian farmed trout to reduce antibiotic use
Proponent: FRDC
Lead research provider: UQ
Timeframe: 48 months

Project Title: Development of alternative antimicrobial agents for the treatment of skin conditions to improve animal health and productivity
Proponent: Calix Ltd
Lead research provider: UniSA
Timeframe: 36 months

RESEARCH PROJETS IN CO-DESIGN

Project Title: What is an AMR Solution?
Proponent: SAAFE (Strategic Investment)
Lead research provider: SAAFE Consortium
Timeframe: 18 months

Project Title: Screening level AMR risk assessment for the Australian vegetables industry
Proponent: Hort Innovation
Lead research provider: SAAFE Consortium
Timeframe: 18 months

Project Title: SeaBOS AMR Keystone project
Proponent: SeaBOS
Lead research provider: UniSA
Timeframe: 7 months

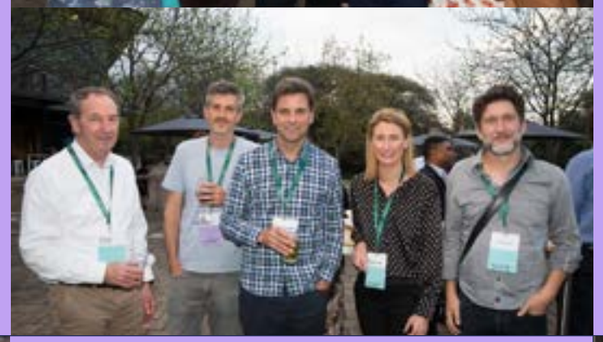
AMR Solutions Summit

SAAFE's official launch and inaugural AMR Solutions Summit, held at the National Wine Centre in Adelaide, brought together leading international and national AMR and industry experts, and more than 70 partners from Australia's food and agribusiness industries, environmental management sectors, government agencies and national research organisations who explored the latest technologies, trends and research to reduce the threat of AMR and translate Australia's National One Health AMR action plan into practice.

Over the two-day summit, delegates heard producer, national and international perspectives on One Health and AMR, learnt about industry actions and priorities, had discussions around futurism, ethics, analytics and education, explored digital transformation for AMR decision making and management, and examined the relationship between AMR, ethical investment and sustainable development. Day two featured an AMR 'Pitch Fest' with presentations showcasing proven, developing and proposed solutions to AMR challenges.

AMR Solutions Summit

AMR Solutions Summit



Investing in Education and Training

Industry focused education and training programs are a core component of Cooperative Research Centres (CRC).

These programs for PhDs and early career researchers (ECRs) are designed to build capacity, capability and skills outside of the core research candidates undertake. This helps CRCs to achieve enduring change as researchers will often develop careers lasting many years beyond the CRC's life.

SAAFE commissioned leading expert Professor Pat Buckley to develop a framework for our Scholars Program for PhDs and ECRs.

Based on the framework recommendations, key features of the SAAFE Scholars Program include:

- A program of individualised and cohort-based training and development experiences that support timely and productive completion, develop One Health AMR literacy and amplify industry readiness;
- Topping up base scholarships to ensure a living allowance of $45,000 per annum; and
- Access to dedicated professional development funds where all PhD students are eligible for a further $21,000 across the life of their PhD to engage in professional development opportunities and connect with the SAAFE community.

Charlotte Ferrier was appointed in early 2024 as SAAFE's Education and Training Program Manager. She will oversee the recruitment of the first cohort of PhDs by mid 2025, working with universities to leverage scholarships and other government schemes to maximise student funds.

Charlotte will also guide candidates to create personalised development plans, and work with research and industry partners to develop training that responds to industry needs around AMR, including One Health literacy.

Our People

The Hon. Karlene Maywald, Chair

A passionate water industry professional whose career has been underpinned by her mission to achieve safe and sustainable water for all, Karlene acutely understands the threat that AMR poses to agriculture, food and the environment.

As the South Australian Water Ambassador and Chair at WaterAid Australia and Cancer Council SA, Karlene has a recognised ability to establish solid relationships with key stakeholders at local, state, national and international levels. Her time as a Member of Parliament (1997-2010) and a Cabinet Minister in the South Australian government (2004-2010) gave her extensive experience in high-level strategic planning, budget oversight, change management and problem solving across a broad range of high-risk sectors including water security, regional development and science and information. Karlene has been Director of SA Water and Chair of the National Water Commission among many other high-profile roles.

Dr Tony Peacock, Director

An innovation advocate, as well as a long-time researcher and manager in the pork industry, Tony is well versed in the threat that antimicrobial resistance poses to our food industry and the value of AMR stewardship and solutions.

He has been working with industry for more than 20 years on the responsible use of antibiotics, and chairs the Australasian Pork Research Institute, where reducing the routine use of antibiotics is his top priority.

Tony also invested in and previously managed Wintermute Biomedical Pty Ltd and Ten Carbon Chemistry – a medical and an industrial company, respectively, both aimed at reducing AMR.

Formerly CEO of the CRC Association, the Invasive Animals CRC and the Pig R&D Corporation, he has been a researcher at the universities of Sydney, Melbourne and Saskatchewan. Tony chairs the SAAFE Education and Training Committee.

Scott Ashby, Director

Scott has more than 20 years' senior government experience, spanning primary industries, biosecurity, animal and plant health, natural resource management and water management.

He's well-versed in the threat posed by AMR, having previously served as the Chief Executive at both the South Australian Department of Primary Industries and Regions (PIRSA) for seven years and the Department for Water, Land and Biodiversity Conservation (DWLBC), among myriad other government leadership positions, including CEO of Onkaparinga Council.

Scott brings to the SAAFE Board unique perspectives from leading applied science programs and working collaboratively with industry. He is currently the Executive Director of Basin Science and Knowledge at the Murray-Darling Basin Authority. Scott chairs the SAAFE Audit, Finance and Risk Committee.

Liz Riley, Director

A consulting viticulturist in wine grapes with expertise in agrichemicals, biosecurity, and pests and diseases, Liz's interest in AMR began in the 90s when she encountered significant resistance problems with botrytiscides, which pushed the crops close to market failure.

This experience brought home the realities of managing agrichemical modes of action to minimise the risk of AMR and spurred her desire to effectively measure resistance levels in the field to support decision making.

Liz was Director of the Australian Wine Research Institute for 12 years, and Vice President and Chair of Research & Development of the NSW Wine Industry Association, and was most recently named the first female recipient of the NSW Legend of the Vine. Liz sits on the SAAFE Education and Training Committee.

John Merakovsky, Director

A trained molecular biologist and seasoned technology executive, John brings a unique lens and broad suite of experience to our board.

Driven by a desire to leverage his scientific training and commercial experience to positively impact a priority issue for the country and all Australians, he's a valuable member of the SAAFE team.

Most recently, John was CEO of Flybuys and previously CEO/MD of ASX-listed company Integrated Research, GM of Seek Learning and CEO of Experian among other executive and senior leadership positions. He is also a non-executive director of OpenLearning Ltd (NSW), Chair of Orijin Plus (WA), Chair of Experimenta Media Arts (Vic) and an Advisory Board Member of Drop Bio (NSW). John sits on the SAAFE Audit, Finance and Risk Committee.

Julie Orr, Director

Julie is a financial services executive and director with extensive experience on ASX-listed, government and non-listed boards across funds management, superannuation, stockbroking, research, ESG, biodiversity and sport.

She is currently a director of Australian Ethical Investments and a director of AvSuper Ltd. Julie also serves on the Audit & Risk Committee of the NSW Biodiversity Conservation Trust. Originally joining SAAFE as a member of the Audit, Finance and Risk Committee, Julie was later appointed to the Board in December 2023.

Alex Lloyd, CEO

With a commercial background, Alex has spent his career at the interface of research and industry – leading more than $500 million of investment into applied R & D and product development across diverse engineering and science sectors.

Before joining SAAFE as CEO, Alex was an independent consultant working with public companies, research institutes and SMEs developing and commercialising a diverse range of technologies across energy, environment, and advanced manufacturing sectors. Alex started his careering in Germany, where he worked for a venture capital backed clean tech company.

Professor Erica Donner, Research Director

An interdisciplinary environmental scientist, Erica has expertise in chemical and microbiological risk assessment and systems-based contaminants analysis.

She also has a particular interest in managing AMR risks in the water cycle, organic waste, and food production systems.

Erica leads SAAFE's national consortium of researchers working together with industry and government partners to co-design, develop and implement best practice solutions to tackle the complex threat of AMR.

Erica led the bid to establish SAAFE, from her role as Research Leader at the University of South Australia's Future Industries Institute.

Associate Professor Aaron Jex, Monitoring Program Lead

Aaron is Associate Professor in Veterinary Parasitology at the University of Melbourne and Walter and Eliza Hall Institute of Medical Research where he leads an infectious diseases research laboratory.

He has worked within the Victorian water industry for more than 15 years, focusing on molecular-based diagnostics and systems biology. During the COVID-19 pandemic, he played a key role in developing advanced technologies underpinning Victoria's COVID wastewater monitoring program, including methods to support wastewater-based detection of high-risk SARS-CoV-2 variants and whole genomic sequencing methods to assist community tracing.

Professor Ricardo J. Soares Magalhães, Analytics Program Lead

Ricardo is a veterinarian with research experience spanning human and animal public health.

He specialises in the geospatial epidemiological modelling of zoonotic diseases, surveillance system design, and evaluating biosecurity interventions to reduce zoonotic hazards (including AMR).

In his role at SAAFE, Ricardo is focused on optimising antimicrobial surveillance, as well as antimicrobial use and biosecurity decision-making by facilitating industry-led research into the development of cloud-native data capture infrastructure and data analysis methods.

He is the Professor of Zoonotic Disease Epidemiology and Biosecurity at the University of Queensland, and Director of the Queensland Alliance for One Health Sciences at the University of Queensland.

Professor Andy Barnes, Solutions Program Lead

Andy is a medical microbiologist who has specialised in livestock vaccines for 30 years.

His University of Queensland Aquatic Animal Health Lab is focused on aquatic animals' health and immunity and developing vaccines for a broad range of finfish species.

Andy worked for the Scottish Office of Agriculture and Fisheries Department and the Moredun Research Institute in Edinburgh before joining a small Canadian biotech company, Aqua Health Ltd, that specialised in developing vaccines for aquaculture. Aqua Health was bought by pharmaceutical giant Novartis in 1999, and Andy worked in Novartis' animal health division for four years before transitioning to an academic career at the University of Queensland.

Charlotte Ferrier, Education and Training Program Manager

Charlotte has a background in university research administration and management, with a focus on research education, graduate research and transferrable skills development.

Charlotte joined SAAFE from the University of South Australia where she held various roles including STEM Program Services Manager (Research) and Manager, Graduate Research Development.

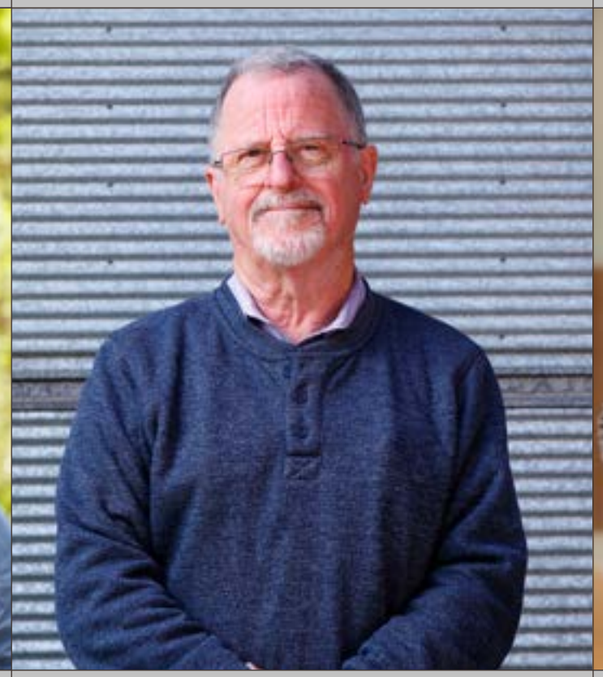
Drawing on her time spent working with HDR students, supervisors and research education leaders, Charlotte is committed to ensuring the Education & Training Program becomes a key component of SAAFE's legacy.

Professor Nicholas Ashbolt, Living Labs Lead

Nicholas is a world-renowned environmental microbiologist with an international research background that spans Sweden, North America and Australia.

Nicholas specialises in the behaviour and movement of environmental pathogens in relation to water guidelines. His work has contributed to the risk-based approach adopted in the most recent WHO and US EPA water documents that address recreation, drinking and reuse guidelines.

Nicholas holds the Peter Teasdale Chair in Environmental Health Risk Assessment at the University of South Australia. At SAAFE, he leads risk assessment and management initiatives across our research programs, with a specific focus on establishing SAAFE's Living Lab program.



Distinguished Professor Ed Topp, IEAC Chair

Ed is a pioneer in the field of AMR, having initiated the successful Environmental Dimension of Antimicrobial Resistance Conference (EDAR) series - the largest international scientific meeting to specifically address the role of the environment in antibiotic resistance.

A distinguished environmental microbiology and chemistry research scientist, Ed is the Scientific Coordinator of the Genomics Research and Development Initiative on Antimicrobial Resistance (GRDI-AMR). He is also Distinguished Research Chair AMR at INRAE in France, and Adjunct Professor in the Department of Biology at Western University.

Ed became interested in AMR 15 years ago when significant regulatory and scientific concerns were being raised about the widespread use of sewage sludge (biosolids) as organic fertiliser. Ed has been instrumental in establishing the IEAC, its composition and its terms of reference.

Dr Barry McGookin, Food Sector Lead, RAC Chair

Barry is a nationally recognised thought leader in food innovation and manufacturing. With a background in FMCG, and his blend of food technology, marketing and start-up experience, Barry has developed new products and processes, and managed marketing teams for some of Australia's most recognisable food brands.

At Food Innovation Australia, Barry identified, developed and connected R&D and manufacturing capabilities and innovations to food and beverage manufacturers to improve competitiveness and market success for a wide range of organisations.

As SAAFE's Food Sector Lead and Chair of the Research Advisory Committee, Barry plays an integral role connecting the food industry and other sectors to ensure they are part of the conversation in tackling AMR.

Protecting Australia’s communities, environment and economy from antimicrobial resistance.

SAAFE CRC

For more information, or to obtain a copy of SAAFE's Directors' Report and Audited Financial Documents, please email: team@crcsaafe.com.au