

The Institute for Marine and Antarctic Studies

Strategic Plan 2017–2022

WORLD-CLASS MARINE AND ANTARCTIC EDUCATION AND RESEARCH



UNIVERSITY of
TASMANIA



IMAS
INSTITUTE FOR MARINE & ANTARCTIC STUDIES

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Introduction and welcome

Board Chair

Since its establishment in 2010, IMAS has earned a strong reputation for world-leading research and education in marine and Antarctic science. In all of its main areas of endeavour – marine biology, oceanography, and fisheries – IMAS ranks in the top ten globally*. Our success has been, and will continue to be, based on collaboration and partnerships: with industry, government and the community, and between our world-class researchers and their local, national and international colleagues. Science, innovation and research are critical to Australia's success and IMAS is well placed to make an important contribution now and into the future.



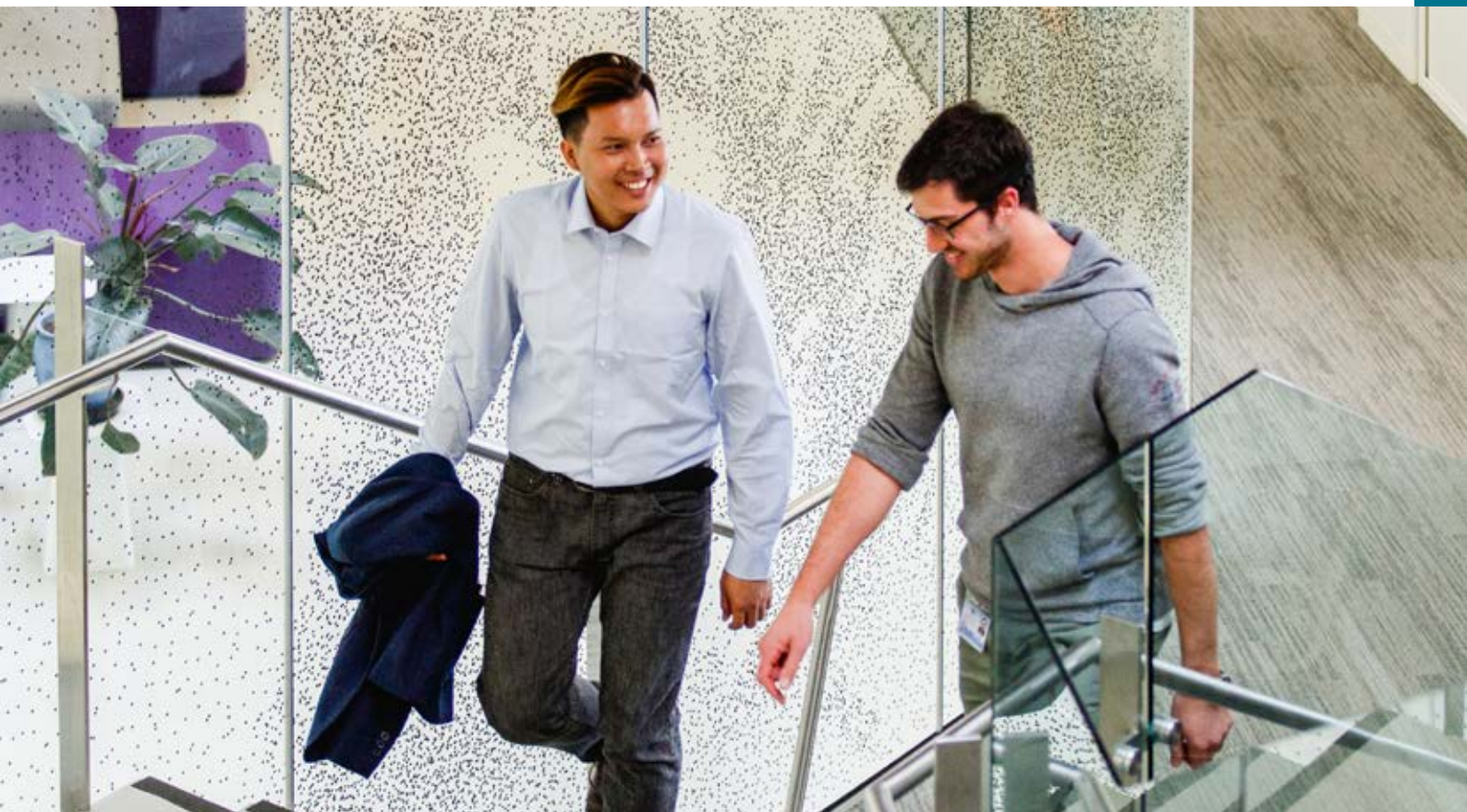
Mary O'Kane

Executive Director

Welcome to the IMAS Strategic Plan for 2017-2022. This Plan is designed to build on the foundations laid during our first seven years and continue the work begun in our first Strategic Plan for 2012-2017. Our clear goals over the next five years are to build on our world-class research achievements and to deliver excellent value for our stakeholders. We will continue our role as a research leader of the marine and Antarctic environment, as an educator of marine and Antarctic science in its broadest sense, and as a key Research Institute of the University of Tasmania.



Professor
Richard Coleman



*The Centre for World University Rankings (CWUR) 2017

Our story

The Institute for Marine and Antarctic Studies (IMAS) was formed in 2010, bringing together the extensive expertise in marine and Antarctic science from within the University of Tasmania, together with fisheries and aquaculture partnerships previously established between the University and the Tasmanian Government.

A world leader in marine and Antarctic research and education

As an internationally-recognised centre of excellence for marine and Antarctic research and education, our vision is to develop environmental understanding and facilitate informed management and sustainable development for the benefit of industry, governments and communities in Tasmania, Australia and the world.

IMAS has three core areas of research focus; in fisheries and aquaculture, ecology and biodiversity, and oceans and cryosphere. IMAS staff also collaborate across the major themes of climate change, ocean-Earth systems, and oceans and Antarctic governance.

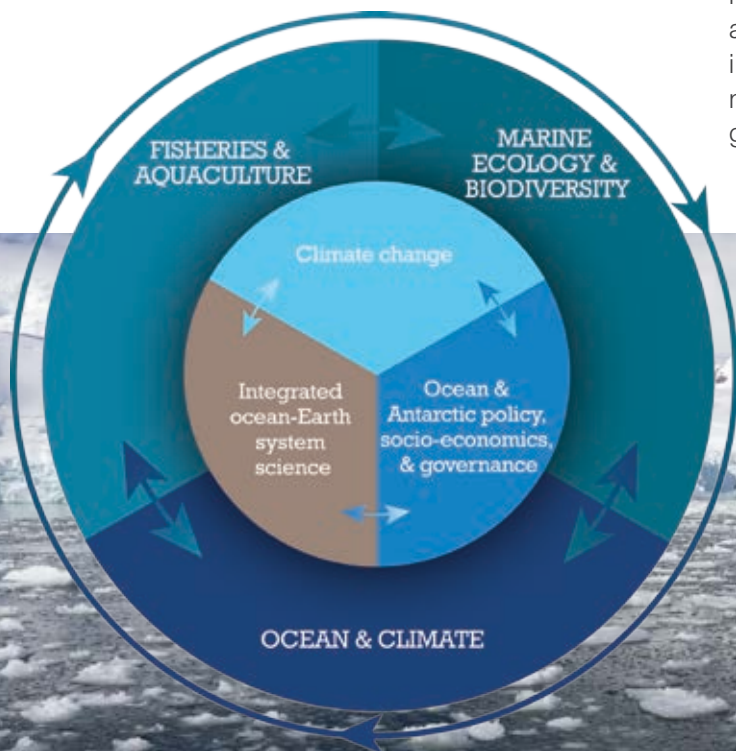
A key part of Tasmania's role as a global gateway to the Antarctic and Southern Ocean

Our geographic location gives us unique advantages with respect to research into valuable local, national and international fishing grounds, and landscapes of global environmental importance; establishing Tasmania as Australia's gateway to the Southern Ocean and Antarctica.

IMAS joins a number of other nationally and internationally-recognised marine and Antarctic research organisations based in Australia's most southern State, endowing Tasmania with the greatest concentration of marine and Antarctic scientists in the southern hemisphere.

Working with government, industry and the community to undertake research which supports economic growth and environmental sustainability

By developing multi-agency, multi-disciplinary projects, and partnering with government, industry and the community, IMAS delivers research and education programs which have a direct economic, social and environmental impact. We solve real-world problems, develop new technologies, build capacity, and inform government policies and industry practices.



Our achievements

Since its formation, IMAS has become the highest performing research institute of the University of Tasmania. IMAS has built a critical concentration of internationally-recognised scientific expertise and leadership; and established enduring partnerships with government, industry and peer institutions around the globe.

Some of these achievements to date include:

Partnering with government, industry and the community to solve real-world problems

Stakeholder partnerships include:

- Practical industry-relevant research in fisheries, aquaculture and marine ecosystem dynamics, particularly through the Sustainable Marine Research Collaboration Agreement (SMRCA) with the Tasmanian Government *Directly benefitting the local Tasmanian economy through sustainable resource management, technology development and improvements to industry practices*
- World-first breakthroughs, such as rearing rock lobsters for commercial aquaculture *Supporting industry development and growth*
- World-class research in climate change and Antarctic and Southern Ocean science *Informing major climate initiatives, marine and Antarctic policy development, resource and marine management practices through scientific discovery and collaborations; locally, nationally and internationally*
- Support for, and participation in, multi-agency cross-disciplinary research centres, such as the Centre for Marine Socio-ecology and the Antarctic Gateway Partnership *Tackling emerging and complex scientific, economic, social, and environmental issues*
- Support for valuable citizen science programs, including Redmap and Reef Life Survey *Raising awareness about the importance of science in the community, as well as rapidly expanding data collection capability through citizen science*

Contributing to scientific knowledge and building the reputation of the University, and the state of Tasmania, as an internationally-recognised centre for excellence in research, research training and education

This knowledge is recognised through:

- Australian Research Council Excellence in Research for Australia (ERA) ratings in 2015 at the highest level of “well-above world standard” in all three of our core research disciplines
- 81 papers in the prestigious *Nature* and *Science* group of publications, and a further 2,100 peer-reviewed papers in other recognised scientific publications since 2010
- Competitive grant income averaging \$30 million per annum
- More than 150 research higher degree candidates enrolled, with over half being international students
- A unique joint University of Tasmania and CSIRO PhD Program in Quantitative Marine Science (QMS)
- New teaching and research partnerships with leading national and international institutions, such as Ocean University of China and Scripps Institution of Oceanography (USA)
- Outstanding international rankings for the University of Tasmania, based on performance indicators such as; academic and employer reputation, citations and impact of research
 - QS rankings for 2016: ranked 49th in the world in Earth and Marine Sciences
 - Centre for World University Rankings (CWUR) rankings for 2017: ranked in the top 10 in the world for fisheries, marine and freshwater biology and oceanography

Our strategy – 2017 to 2022

Building on our past achievements, IMAS will consolidate and focus our investment on a number of key research and education priority areas. Our goal is to maintain our high levels of performance while delivering greater value to our stakeholders, including the University, Tasmanian Government, research agencies, industry and community.

Over the next five years, IMAS will:

Continue a multidisciplinary, whole-of-system approach to research, education, and outreach

We will continue to build on the marine and Antarctic expertise we have established and seek to broaden our strategic collaborations with research and teaching institutions, government, and industry in Australia and internationally.

- Continue to build our international profile and increase our influence on the national and international research agenda.
- Continue to build our capacity to be world leading in marine and Antarctic education and outreach.
- Maintain and increase our internationally-competitive research rankings and outputs.
- Expand our strategic research and teaching partnerships.
- Engage the broader community through programs such as citizen science.
- Build the Institute as a place of choice for marine and Antarctic researchers and students.

Generate greater value for our stakeholders

Through ongoing research and teaching excellence we will deliver demonstrable impact of our research, produce high quality graduates, contribute to global understanding of the marine environment, and facilitate sustainable development and informed management, in our areas of expertise.

- Clearly demonstrate the value and impact of our research.
- Invest in research areas that align with the identified priorities of our stakeholders.
- Deliver well-trained graduates to meet the needs of research, government, industry and the community.
- Ensure our data and research is discoverable and accessible.
- Directly engage with the community via more focused outreach activities.

Secure our long-term sustainability

Following the rapid growth phase that launched IMAS onto the world stage, we will focus our resources to assure IMAS's long-term future at the forefront of research and education.

- Consolidate and align resources with identified priority areas.
- Optimise the workforce and implement support programs to ensure we continue to retain and attract highly skilled staff and the best students from around the world.
- Continue to invest in state-of-the-art research and teaching facilities.
- Continue to invest in longer term collaborative funding models, in partnership with national and international agencies, both in research and education.





Research

IMAS has firmly established itself as a world leader in marine and Antarctic research, successfully responding to the research needs of government, industry and the community. Over the next five years, our engagement with these stakeholders will be directed by these broad research needs:

1. Research excellence and impact

Our clear objective is to maintain our outstanding research performance and ensure our research continues to deliver impact.

Measures:

- Excellence in Research for Australia ratings of “well-above world standard” across IMAS research disciplines is maintained.
- Increased international rankings within the marine science disciplines.
- Publication output in top quartile international journals and the *Nature/Science* group is maintained.
- Series of position papers and impact reports for priority research areas are published with positive uptake and utility.

2. International Influence

In addition to responding to local and national marine and Antarctic research needs, IMAS is well placed to expand its contribution to the international research agenda. We will seek to broaden our international partnerships, and our engagement with international committees and research programs.

Measures:

- Formal collaborations are implemented with compatible high-performing international research institutions.
- Program of staff participation in international conferences, workshops, committees and research programs is developed and implemented.

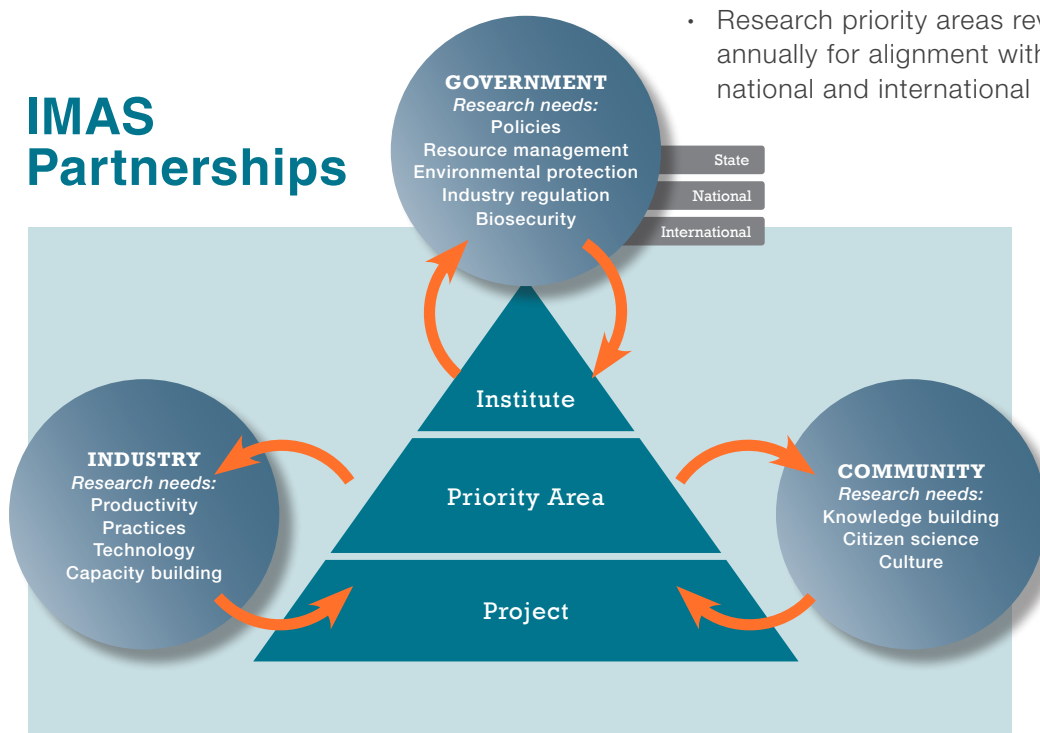
3. Targeted research investment

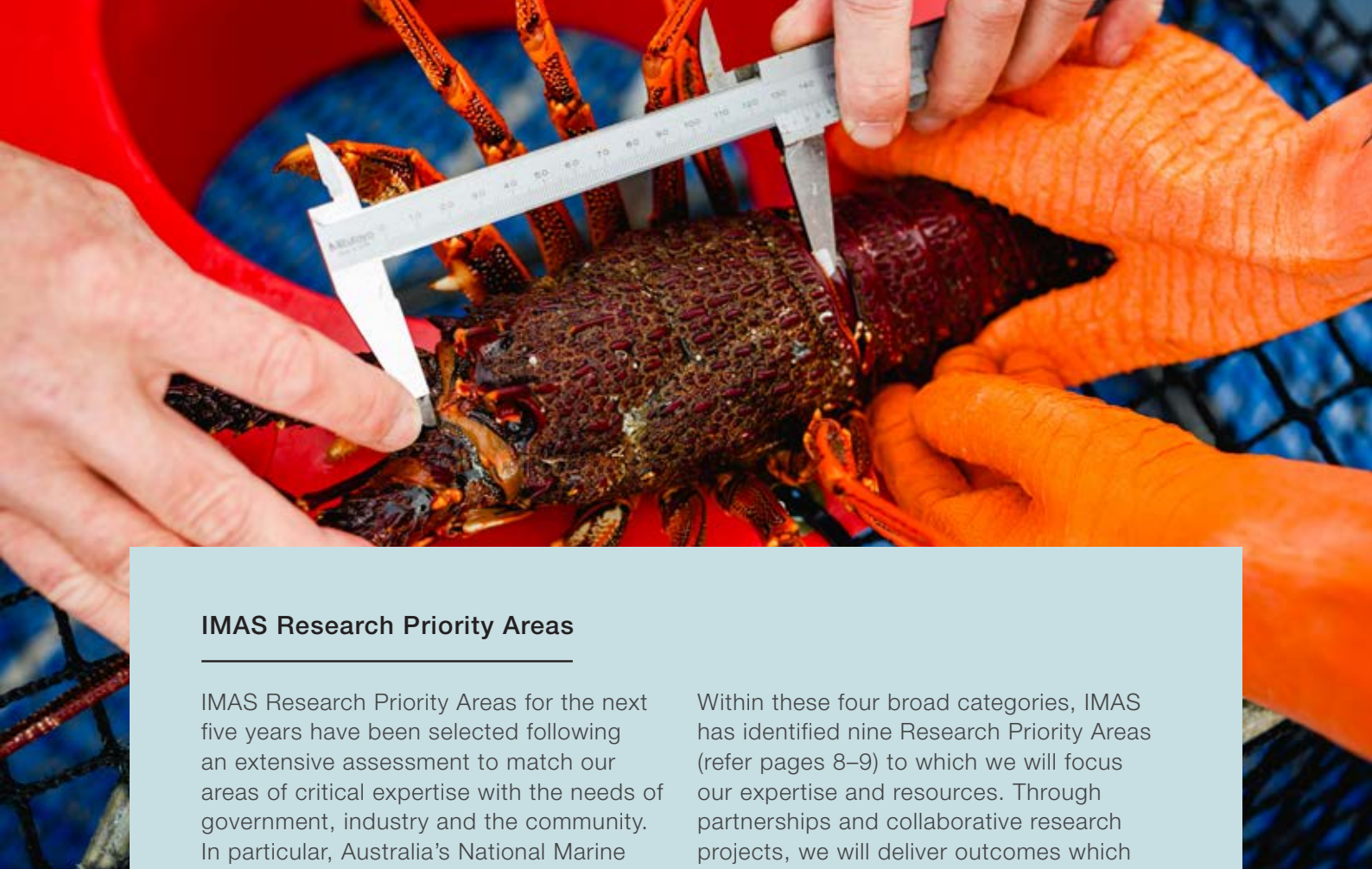
To maximise the return on investment for stakeholders, we will ensure research activities and resources are aligned with identified research priority areas.

Measures:

- At least one new investment opportunity is developed for each research priority area.
- Research priority areas reviewed annually for alignment with local, national and international needs.

IMAS Partnerships

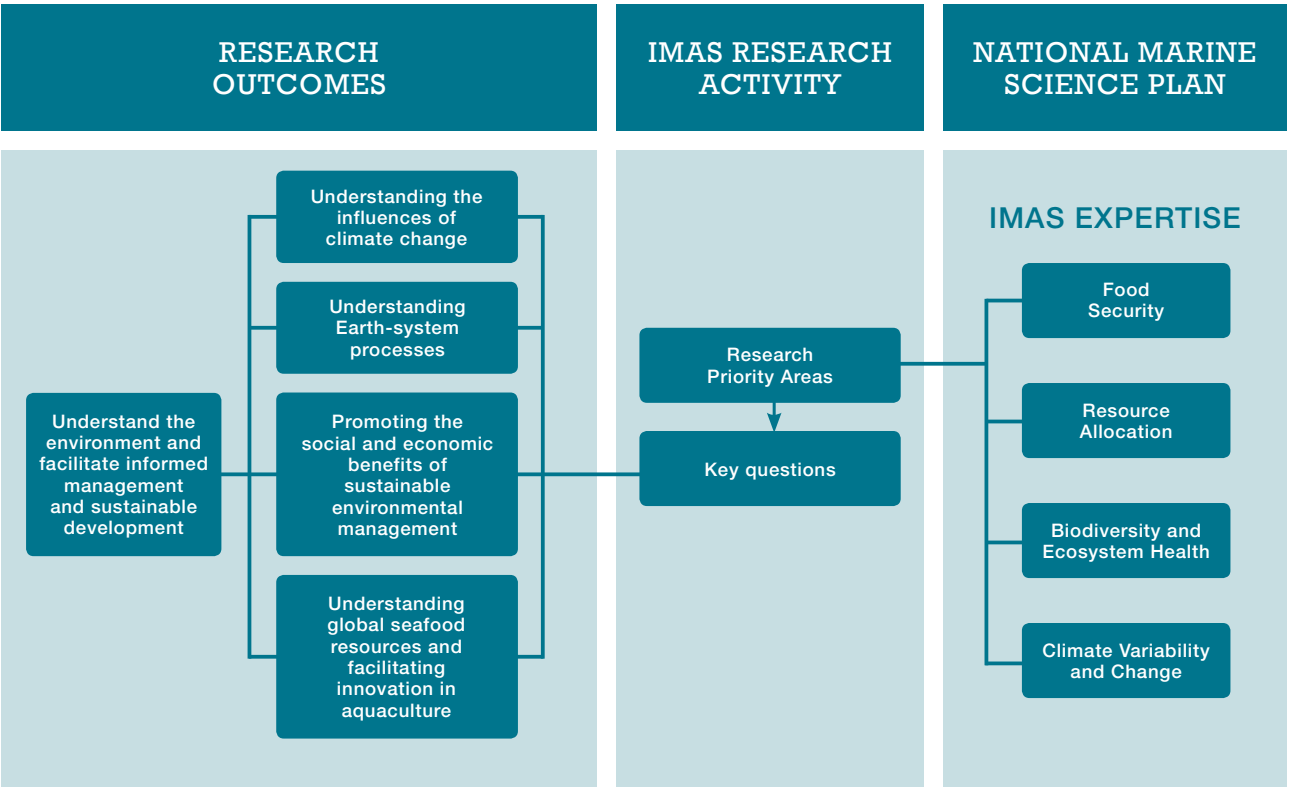




IMAS Research Priority Areas

IMAS Research Priority Areas for the next five years have been selected following an extensive assessment to match our areas of critical expertise with the needs of government, industry and the community. In particular, Australia’s National Marine Science Plan succinctly categorised four areas in which IMAS can deliver material benefits to Tasmania, Australia and the world – food security, resource allocation, biodiversity and ecosystem health, and climate variability and change.

Within these four broad categories, IMAS has identified nine Research Priority Areas (refer pages 8–9) to which we will focus our expertise and resources. Through partnerships and collaborative research projects, we will deliver outcomes which ultimately contribute to the Institute’s vision – to understand the environment and facilitate informed management and sustainable development.



IMAS has nine Research Priority Areas for 2017–2022:

Fisheries Assessment

1

- Optimising data collection to support fisheries management tools
- Improving stock assessment to better represent management, fishery and biology
- Exploring novel management methods to improve environmental, social and economic outcomes
- Understanding the interactions between management and fisher behaviour

Food Security Innovation

2

- Innovation to further develop sustainable fisheries and aquaculture to underpin food security
- Innovation to support enhanced marine production and biosecurity
- Innovation to manage water quality of aquaculture systems

Whole of Ecosystem Management

3

- Improving management of environmental marine ecosystems for sustainable fisheries and aquaculture
- Accurate assessment of ecosystem condition, and identification of ecosystem trends
- Predictive tools that support planning and management for marine conservation, sustainable fisheries and aquaculture development
- Promoting community involvement through education and outreach, along with citizen science programs, to encourage broader investment in local marine ecosystems

Ecology and Ecosystem Dynamics

4

- Roles of Southern Ocean predators and animal population viability
- Physiology of Southern Ocean benthic and microbial species and communities
- Coastal ocean processes
- Multiple ecosystem stressors and global climate change

Biodiversity and Marine Habitats

5

- Quantifying and predicting biodiversity and its drivers at regional and ocean scales
- Biodiversity trends at national to regional scales over annual-decadal periods
- Undertaking baseline assessments, and developing predictive capacity for various future habitat scenarios

Marine Socio-ecology

6

- Resilience of linked socio-ecological systems
- Multiple impacts and trade-offs among ecosystem processes and their services under global climate change
- Community expectations, societal needs and changes

Ocean and Antarctic Governance

7

- Planet under pressure: ocean and Antarctic governance in a changing environment
- Social, cultural, legal and historical perspectives on the Antarctic and Southern Ocean region

Cryosphere and Solid Earth

8

- Antarctic Ice Sheet controls on past, present and future sea level
- Ice shelf and ocean interactions
- Unravelling the tectonic evolution of Antarctica and the Southern Ocean

Ocean and Antarctic Physics and Chemistry

9

- Exploring ocean and sea ice biogeochemical change
- Southern Ocean and Antarctica in the climate system
- The changing climate and its causes

Learning and teaching

IMAS offers a range of unique undergraduate and postgraduate courses, and research training programs – attracting students from across the globe. Our specialisations include Marine Biology and Resource Management, Marine and Antarctic Governance, Oceanography, Aquaculture, and Physical Sciences.

1. Provider of choice

Over the next five years, we will further refine our learning and teaching offerings to ensure they continue to be attractive and relevant, and deliver graduates who meet the needs of industry, government, and research institutions.

We will expand our international footprint through formal teaching partnerships, and we will develop and promote clear pathways from undergraduate programs, to postgraduate study and research higher degrees. Both initiatives will serve to increase student intake and retention, thereby building capacity in marine and Antarctic science.

Measures:

- Successful implementation of consolidated course framework and curriculum renewal, with a focus on delivering specialist units in our areas of expertise.
- Development of at least two new international teaching partnerships.
- Measurable growth in student enrolments and retention, with diversity of intake.
- Increased community involvement (such as via MOOCs, citizen science projects)
- Increased stakeholder involvement (such as Course Advisory Panels)

2. Sustainability

In the globally-competitive education sector, IMAS needs to pursue continuous improvement in teaching efficiency and ensure the returns to students are maximised.

We will seek to consolidate and refine our teaching programs to deliver greater flexibility and relevance for students, whilst also improving the cost effectiveness of delivery.

Measures:

- Successful implementation of consolidated course framework and curriculum renewal.
- Increased teaching efficiency (cost per equivalent full-time student load).
- Increased student enrolments in IMAS courses and high levels of student satisfaction.



Partnerships

Collaboration is the key ingredient in successful research and education programs – enabling the formation of large multi-disciplinary teams to tackle complex problems of high relevance to modern society; improved efficiencies with research and education programs nationally and internationally; and enabling the global growth in marine and Antarctic science capacity.

In partnership with key national marine and Antarctic research institutes, including the Commonwealth Science and Industrial Research Organisation (CSIRO) and the Australian Antarctic Division (AAD), IMAS has helped to create the greatest concentration of marine and Antarctic scientists in the southern hemisphere, right here in Tasmania.

1. Bringing the world to Tasmania

IMAS will build upon its long-standing national and international research and education partnerships with key national marine and Antarctic research institutes to consolidate our position as a world leader, build knowledge and capacity in marine and Antarctic science, and draw new investment dollars into our programs and the Tasmanian economy.

Internationally, IMAS will expand upon its existing collaborations with institutions in Europe, Asia Pacific, North America and South Africa, as well as its contribution to international science direction through participation in international fora such as the Intergovernmental Panel on Climate Change (IPCC), the Partnership for Observation of the Ocean (POGO), CLIVAR (Climate and Ocean: Variability, Predictability and Change), the Scientific Committee on Antarctic Research (SCAR), and the International Union for the Conservation of Nature (IUCN).

Measures:

- At least two international partnerships that deliver on strategic objectives in research priority areas, education programs, multi-agency collaboration, and peer-to-peer collaboration identified and developed.
- Brand positioning and political engagement strategy developed and implemented – securing longer term and alternative funding sources for IMAS.

2. Delivering value to our partners

Within Australia, IMAS is the leading temperate marine and Antarctic research institute, built on unique partnerships with industry, government and other research institutions. Ensuring that these partnerships endure and that we remain responsive to stakeholder needs, requires ongoing review, communication and development.

Measures:

- Retained, strengthened and expanded partnerships within Tasmania, nationally and internationally.
- Improved uptake of impact reports for priority research areas, at local, national and international levels.
- Implementation of programs to enhance efficiencies across the marine and Antarctic studies portfolio both nationally and internationally.
- Expanded community outreach programs; to strengthen understanding of, and connection with, marine and Antarctic environments.



Community

IMAS plays a vital role in our local community: promoting the value of science, contributing to the local marine culture, and meeting the research and education expectations of the community. It is imperative that IMAS is highly visible and continues to deliver value to the community, and in turn, benefits from the critical support that this relationship bestows. IMAS will continue to expand its community engagement activities to enhance the community's understanding of marine issues.

1. Delivering and communicating value

We will ensure that the local industry, economy and community benefits from our world-leading research by ensuring it is clearly communicated and readily available. The community will also benefit from our citizen science programs, greater outreach activities and reporting.

Measures:

- Research output is available and accessible in a timely manner.
- IMAS research projects include a formal communications plan.
- Increased uptake and utility of impact reports for priority research areas.
- Community sentiment towards, and understanding of IMAS is positive and increasing.

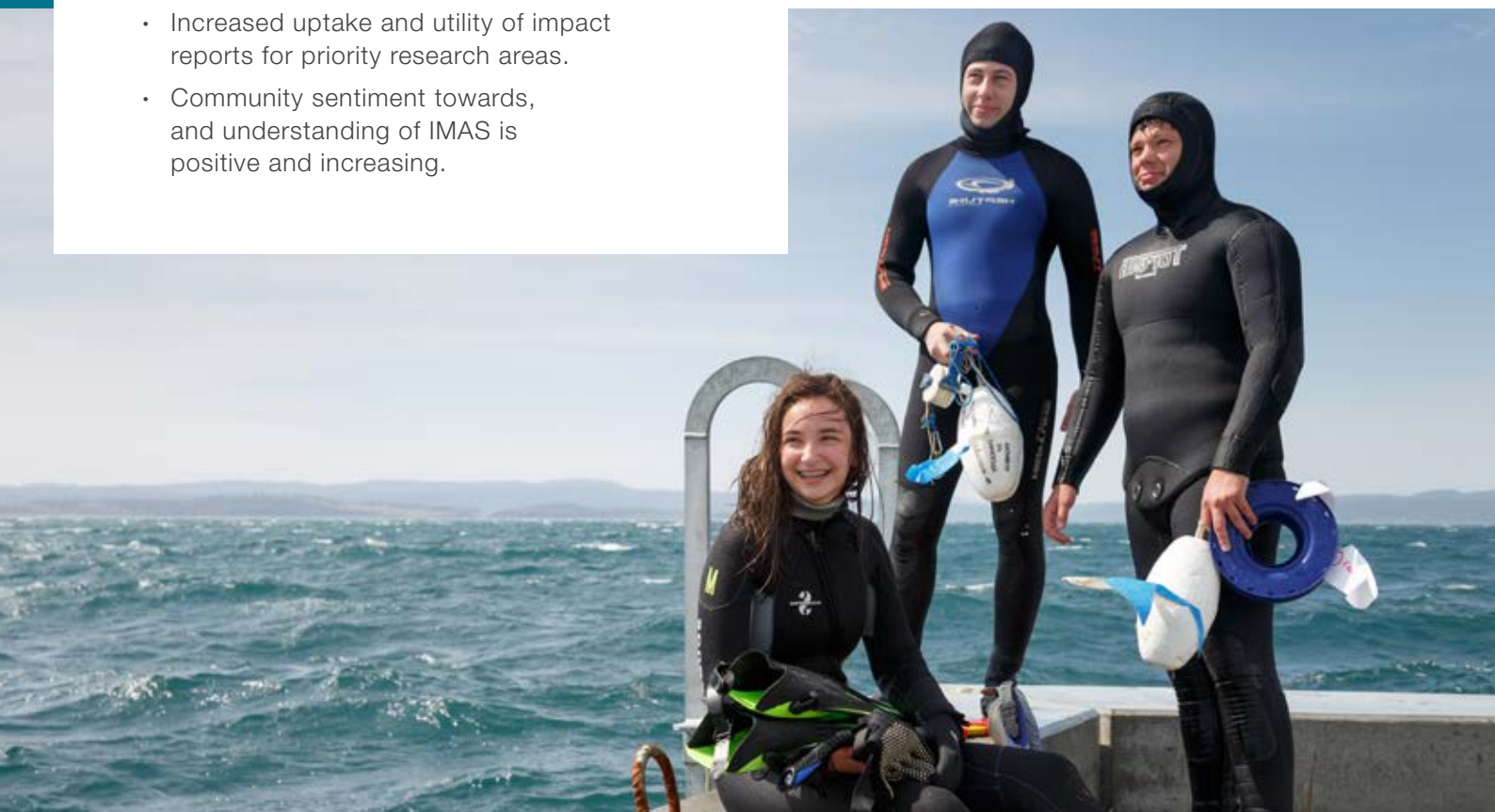
2. Building community support

Locally, IMAS will actively engage with the community through a range of events and activities, particularly targeting regional areas which directly benefit from our work – encouraging participation in, and support for, IMAS's research and education programs.

We will seek to broaden our engagement with University of Tasmania alumni, creating an international network of advocates for IMAS and Tasmania, and build opportunities to connect with philanthropic organisations and individuals through the global benefits of our activities.

Measures:

- Increased community outreach activities, particularly in regional Tasmania.
- Enhanced involvement and investment from alumni and philanthropists.
- Increased uptake of citizen science and outreach programs at local, regional, national and international levels.



Institute

IMAS has experienced rapid growth since its formation in 2010, therefore the next five years will be marked by consolidation of our investment, and value-adding to secure the longevity of our contribution to the local, national and international research and education agendas.

1. Employer of Choice

Our success is a product of our people, and therefore it is essential that we continue to attract, retain and appropriately support high-performing staff – both academic and professional.

IMAS will continue to develop a range of programs to meet the needs and expectations of our staff, including; work health and safety initiatives, inclusion diversity and equity programs (including the Athena SWAN Charter), and wellness and age-friendly workplace packages. IMAS will also seek to provide opportunities for staff personal development; career paths; job security; freedom to explore new horizons; and encourage new collaborations and partnerships.

Measures:

- Facilitation of support programs implemented and valued by staff.
- Increased proportion of international academics employed.
- Increased number of collaborative programs/partnerships.
- Increased job satisfaction and job security through tenure and longer term contracts.

2. Optimise Investment

To maintain our position at the forefront of international research and education, we need to continue to invest in the essential skills, expertise, infrastructure and equipment necessary for world-leading research and education. This requires ongoing assessment of our resource requirements against the evolving needs of our stakeholders, and prioritisation of these requirements to optimise the return-on-investment and increase efficiencies in program delivery.

Measures:

- Workforce and asset planning programs implemented and integrated into annual plans.
- Measurement and reporting of financial and human resource return-on-investment indicators set by our stakeholders occurs annually.
- Excellence in academic performance metrics is maintained.

3. Sustainability

The funding of research-focussed institutes represents an ongoing challenge for Universities across Australia. IMAS is both a research-focused institute and an education provider and consistency of funding is crucial to support the long-term nature of research, and the development and implementation of successful teaching and community based programs.

The Institute continues to work closely with University management to refine the IMAS funding model and ensure the sustainability of our research and education programs, as well as with other stakeholders, such as the Tasmanian Government.

Measures:

- Funding model which supports and promotes the strategic objectives of the Institute is implemented.
- Additional resources to expand the research capacity of the Institute have been identified and captured.
- Succession planning, mentoring and leadership renewal, with inclusion, diversity and equity principles in mind has been completed.



WITH YOUR HELP, OUR RESEARCHERS CAN
CONTINUE TO TACKLE SOME OF THE WORLD'S
MOST PRESSING PROBLEMS — SUCH AS
CLIMATE CHANGE, FOOD SECURITY AND
ECOLOGICAL BIODIVERSITY. TO DONATE
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