TASMANIA'S SUSTAINABLE OCEAN ECONOMY BEYOND 2033

AMBITION

AQUACULTURE

BLUE ECONOMY
COOPERATIVE RESEARCH CENTRE

Australian Government
Department of Industry, Science and Resources

AusIndustry
Cooperative Research Centres Program

The Blue Economy CRC was established in 2019 as an independent not-for-profit company limited by guarantee and is a Cooperative Research Centre under the Australian Government's CRC Program. We bring together 43 industry, government and research partners from ten countries with expertise in aquaculture, marine renewable energy, maritime engineering, environmental assessments and policy and regulation.

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For more information on this project, visit our website.

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We acknowledge the Traditional Custodians of Country and their connections to land, sea and community. We pay our respects to their elders past and present and recognise that Australia is home to the oldest culture in the world.

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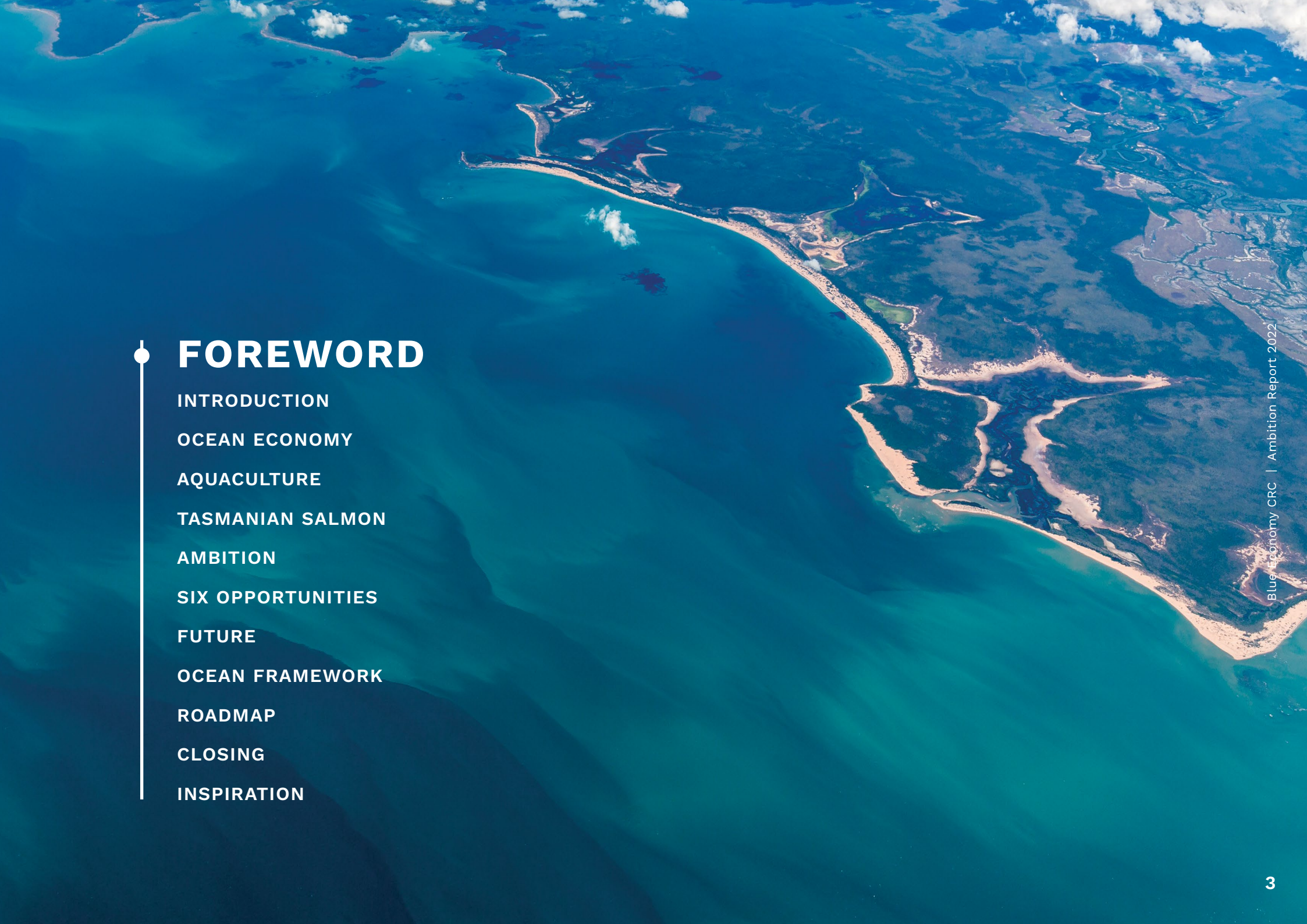

FOREWORD

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Oceans have provided health, well-being, prosperity and connection to Tasmanian coastal communities for generations and to Tasmanian Aboriginal people for over sixty thousand years.

Cared for and used responsibly by Tasmania's first peoples, these waters have been a medium for explorers and European colonisers, hunting grounds for whalers and provided ports for seafarers.

Today they are home to some of Australia's most recognised seafood producers, play host to a diverse range of temperate marine life and iconic ecosystems and are fringed by coastal communities.

An island state with mature ocean industries such as wild fisheries and finfish farming, Tasmania is also a gateway for new, emerging and transitioning ocean industries like seaweed farming at scale, open ocean finfish aquaculture and the generation of energy from offshore wind and waves.

All are seeking access to shared public waters across the Exclusive Economic Zone (EEZ).

As the importance of oceans in addressing global challenges like climate change, biodiversity restoration, equity, stewardship and food production gains growing recognition and community and consumer sustainability expectations come to the forefront, it's time to look at Tasmania's approach.

How to ensure its approach to the oceans is contemporary, that sustainable aquaculture growth is integrated into a holistic framework for the broader ocean economy and what is needed to ensure Tasmania meets these contemporary directions.

INTRODUCTION

Earlier this year, the Secretary-General of the United Nations stated that "sustainable ocean management could help the ocean produce as much as six times more food and generate 40 times more renewable energy than it currently does".

A motivation to sustainably unlock more of the oceans' economic potential continues to drive industries and governments to build on what they have now while looking further offshore to enhance and adapt sustainable business models.

The Blue Economy CRC has the advantage of building on decades of work within partner organisations and three years of targeted research and engagement to support the growth of the ocean economy, with a focus on two new, emerging and transitioning ocean industries for Australia: offshore aquaculture and renewable ocean energy production. Through our recent work, we have established platforms to hear directly from industry, research and interest groups on their opinions on opportunities and challenges for Tasmania's ocean economy beyond 2033.

Through this work, we understand existing ocean industries are seeking certainty about their continued access to the ocean while new, emerging and transitioning businesses are seeking clarity on access to make long-term capital investment decisions.

As well as the certainty sought by ocean industries, there are also calls for a comprehensive oceans management framework for Tasmania to ensure an integrated and balanced approach that acknowledges and values the views and contributions of all stakeholders.

> **I urge all stakeholders to invest in sustainable ocean economies for food, renewable energy and livelihoods. Sustainable ocean management could help the ocean produce as much as six times more food and generate 40 times more renewable energy than it currently does. We need sustainable business models for ocean economies to operate in harmony with the marine environment and to guarantee a sustainable seafood industry.**
>
> António Guterres, Secretary-General of the United Nations,
> World Ocean Conference, 27 June 2022

Table 1: Summary of key challenges and opportunities identified by stakeholders. Read more here.

OPPORTUNITIES	CHALLENGES
» A stronger focus on sustainability » Delivering carbon positive aspirations » Building stronger community relationships » Demonstrating the collaboration, scope and achievements of current industry » Introducing integrated planning for the marine estate » Demonstrating evidence-based actions » Continuing to support innovation and R&D	» Lack of trust in both government and industry » The need to communicate with impact » The need to build workforce pride and ensure workforce planning » Demand for more transparency » Demonstratably responsible use of public water » Commitment to work on climate and zero carbon and nutrient aspirations

This BE CRC Directions Report introduces an ambition for 'Tasmania's ocean economy beyond 2033', a new approach to sustainable ocean economies and ocean stewardship for Tasmania.

It suggests a contemporary and integrated approach to oceans use and stewardship, balanced with nature and supported by innovation. It explores this approach in the context of Tasmania's finfish aquaculture industry.

It presents six opportunities, a future profile for aquaculture and a roadmap. The main intended audience includes policy makers, regulators, government, industries, supply chain, retailers, interest groups, community and research institutions.

We believe that supporting this ambition will drive an innovative and sustainable aquaculture industry, balanced with nature and integrated into the Tasmanian way of life.

OCEAN ECONOMY

Globally, the oceans cover 71% of the earth's surface and play a fundamental role on our planet – offering ocean resources as well as natural services that collectively support economic growth, improved livelihoods, jobs, wellbeing, spiritual connection and health, while maintaining rich and diverse marine and coastal ecosystems.

We refer to this holistic system as the ocean economy (or blue economy).

The ocean economy is typically managed as sectors. While these sectors have longstanding regulatory and planning foundations and administrative support, the absence of integrated frameworks reduces understanding non-sectoral impacts and interactions, cumulative impacts and seascape level decision making.

The Government of Scotland has defined their blue economy to include the marine, coastal and the inter-linked freshwater environment of Scotland, the different marine and maritime sectors it supports and the people connected to it.

It also encapsulates the legislation, policies, programmes and international commitments that determine its management, as well as the under-pinning scientific research that provides data and information for evidence-informed policy development and is used to evaluate success.

Table 2: The Ocean Economy = Ocean Industries + Services.

OCEAN INDUSTRIES			OCEAN SERVICES	
Food » Aquaculture » Wild catch **Renewable Energy** » Wind » Wave » Biofuel **Research** » Science » Academia » CRCS » ENGOs » Funding investors **Defence**	**Training** » Skills and training **Transport** » Shipping » Ferries **Infrastructure** » Harbours » Ports » Engineering **Energy** » Oil & gas **Tourism**	**Business Services** » Ship building » Feed » Processing » Infrastructure » ICT » Consulting » Transport » Industry associations **Areas** » Marine parks	**Natural Capital** » Stock of renewable and non-renewable natural resources — energy, biosphere, plants, animals, air, wind, water, soils and minerals » Flow of ecosystem and abiotic services » Nutrients » Carbon » Oxygen	**Social Capital** » Attitudes » Cultural practice » Amenity » Health » Wellbeing » Recreation

AQUACULTURE

Aquaculture production is an important source of accessible nutritious food. It has evolved from an alternate to wild caught seafood, to a standalone protein with its own strong and growing market share.

The species raised through aquaculture range from filter feeders like shellfish and seaweeds that draw nutrients from the water to finfish that require the addition of feed through farming operations.

Aquaculture operations differ in scale and scope globally.

Globally, as population increases, wild harvest plateaus and access to farming land and freshwater is constricted, aquaculture is the fastest-growing food-production sector, accounting for more than half of all fish consumed by humans.

The Food and Agriculture Organisation (FAO) states that aquatic food production is forecast to increase by a further 15% by 2030. Farmed seafood is providing the growing population with healthy and nutritious food that can be environmentally, socially and economically sustainable.

When managed well, it is a food system that can have a minimal impact on the ecosystem, contribute to social equity and help us mitigate and respond to the consequences of climate change.

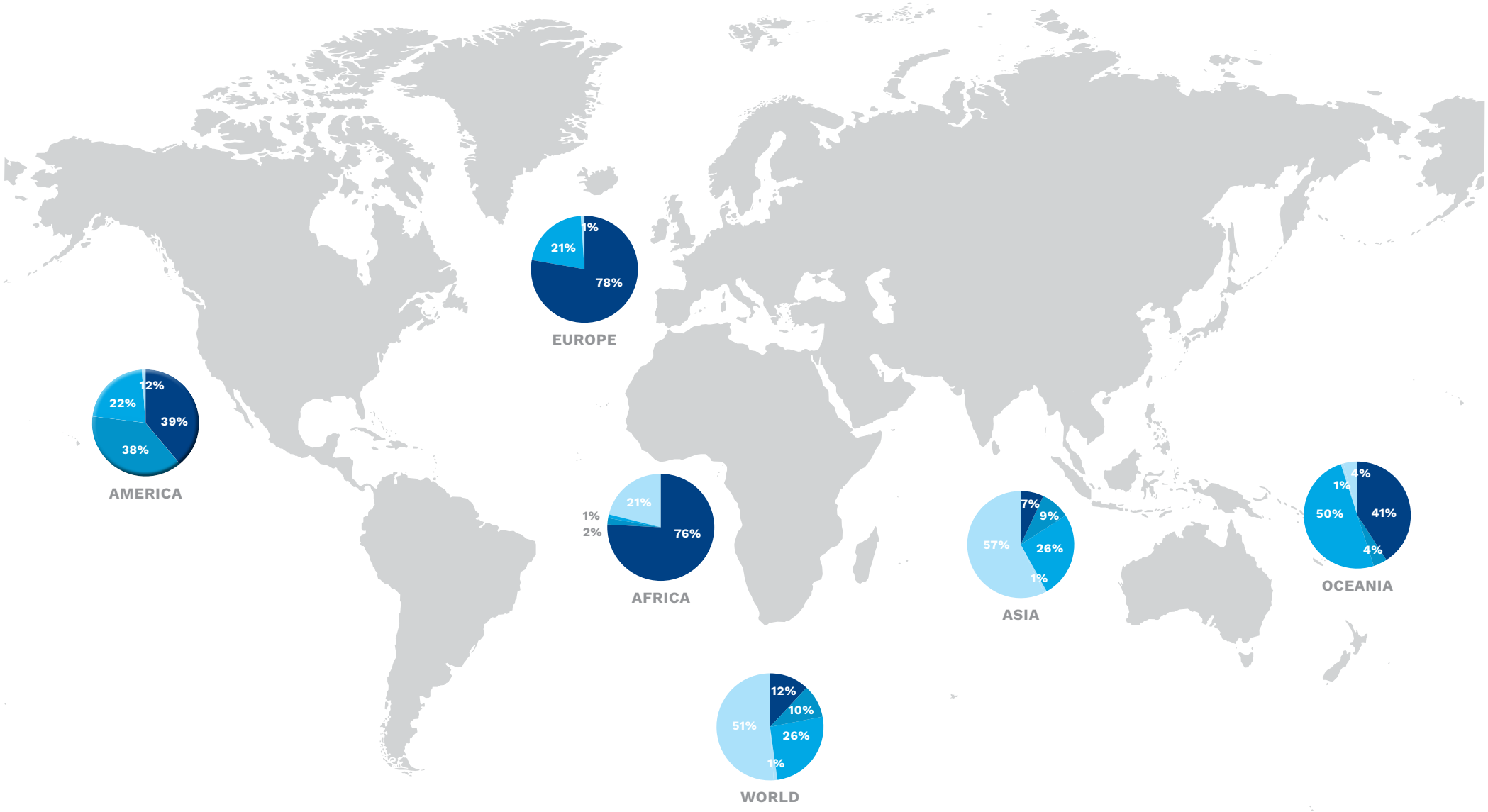
Attributes of sustainably farmed food:

- **Low carbon footprint** - Ratio of GHG use per kilogram produced for finfish.
- **Low feed conversion rate** - Effectiveness that feed is converted to body weight for finfish (high feed efficiency).
- **High omega 3** - Quantity of omega 3 that is essential for heart and brain function and could lower the risk of cancer and heart disease.
- **High edible yield** - Ratio of total body weight that is normally eaten.

Sustainable development of aquaculture is the way of carrying out the farming of aquatic species that contributes to meeting the needs of the present, without compromising the ability of future generations to meet the needs of the future.

This development conserves land, water, natural resources and biodiversity, while being environmentally non-degrading, technologically appropriate, economically viable, socially acceptable and ensures animal health and welfare.

Table 3: Marine and Coastal Aquaculture Production by Region and by Main Species Group, 2020.



1. Finfish 2. Crustaceans 3. Molluscs 4. Other Aquatic Animals 5. Algae

Source: FAO Ecosystem approach to aquaculture management, FAO, 2020

Mega Trends

Looking forward, farmed seafood is likely to be impacted by the following mega trends (trajectories of change). These have the potential to have a substantial and transformative impact and will shape the actions of both producers and governments

CLIMATE CHANGE

Increased consumption of fish can reduce global GHG emissions and improve human health, and concerns about climate change are already influencing dietary choices.

POPULATION GROWTH

The world's population is expected to grow to almost 10 billion by 2050.

GROWING MIDDLE CLASS

The global middle class is getting bigger as a result of fast income growth in emerging countries.

LEANER, CLEANER AND GREENER

An increased focus on potential solutions to our resource constraints through synthetic biology, alternative proteins, advanced recycling and the net-zero energy transition. By 2025, renewables are expected to surpass coal as the primary energy source globally.

FISHERIES FULLY OR OVER EXPLOITED

Supply of wild fish has limited growth potential as fish stocks fished within biologically sustainable levels are decreasing.

WE LIVE LONGER

By 2050, one in six people in the world will be over age 65 (16%), up from one in 11 in 2019 (9%).

HUMAN DIMENSION

There is a strong consumer and citizen push for decision-makers to consider trust, transparency, fairness and environmental and social governance in their approach to regulating economic growth.

While Australia saw a record level increase in public trust in institutions during the pandemic, this 'trust bubble' has since burst, with societal trust in business dropping by 7.9% and trust in government declining by 14.8% from 2020-21.

(Source FAO 2018, CSIRO 2022)

> **Sustainable aquaculture intensification and expansion: In the next ten years, aquaculture must expand sustainably to satisfy the growing demand for aquatic foods while generating new or securing existing sources of income and employment. This requires effective governance frameworks, technological innovations, investment opportunities and value chain developments. The aim is to increase global aquaculture production from between 35 percent and 40 percent by 2030, according to national and regional contexts.**
>
> Towards Blue Transformation FAO, 2022

TASMANIAN SALMON

Tasmania's farmed salmonoid sector is the largest aquaculture sector by value in both Tasmania and Australia.

In the 2021FY, it produced 83,000 tonnes from operations across 3,222 hectares with a gross production value of $888 million with product sold across Australia and approximately 1/3 is exported.

The industry is directly employing 2,975 staff and TSGA reports an indirect workforce of 10,000. Workforce vocations include operations, diving, welfare, quality, sustainability, technology, engineering and research, transport, ICT, feed, processing, marketing and monitoring.

Tasmania's finfish aquaculture sector reports on certain economic, environmental and social benefits to the state through the Tasmanian Salmon Growers Association website, the Salmon Portal and on company websites.

Learnings from this sector have underpinned the diversification of aquaculture and technology into other states and sectors, including Tassal Group's purchase of tiger prawn farms in Queensland and Northern NSW, Huon Aquaculture's interest in kingfish in interstate waters and Sealord's (Petuna) barramundi farms in Queensland.

Beyond production, Tasmanian based supply chain companies are also broadening their scope and entering other industries and markets while bringing lessons back to Tasmanian aquaculture by introducing circular economy solutions, including for plastics and feed ingredients.

The Tasmanian salmon industry, recognised for its innovation and precision is subject to multiple global acquisitions and attracting global feed companies to set up shop in Tasmania.

While producers and feed companies engage in active disclosure of environmental, social and governance (ESG) data and their sustainability actions against accepted global standards and benchmarks, public scrutiny of their level of disclosure and concerns about transparency continue to feature in the local conversation about the industry.

Research by EMRS (TSGA June 2022) tells us the Tasmanian salmon industry is considered important and maintains the support of the majority of the Tasmanian community.

Tasmanians are generally supportive of the salmon industry for the employment it generates in regional areas but there are also concerns relating to environmental practices and the consequences of a growth agenda.

69% OF THE RESPONDENTS DEEMED THE INDUSTRY AS 'IMPORTANT' BECAUSE IT PROVIDES BOTH JOBS AND FOOD FOR TASMANIANS.

87% OF RESPONDENTS SAID THE PUBLIC NEEDED MORE INFORMATION ON THE INDUSTRY.

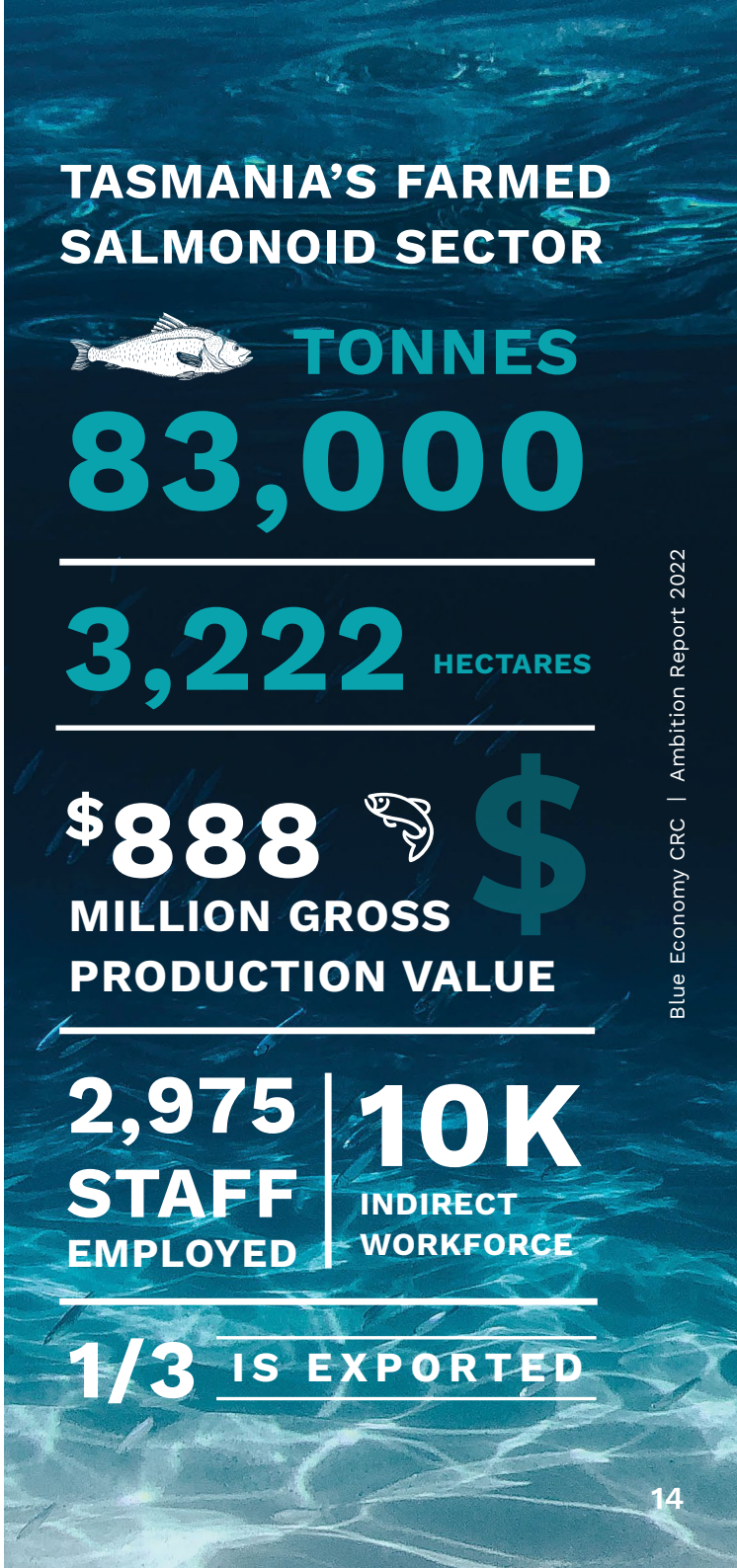
57% SUPPORT THE INDUSTRY

19% NEUTRAL

4% UNSURE

20% OPPOSE

Read more on EMRS outcomes at TSGA.



Challenges & Opportunities

What we heard

The Blue Economy CRC entered into a project agreement with the Tasmanian Government in 2022 to host two stakeholder focused events and report on what we heard. These activities provided a unique body of information drawn from a wide range of stakeholders.

Running parallel to the Tasmanian Government's formal process for developing a 10 Year Salmon Plan, these independent events aimed to stretch the conversation beyond just a single sector. We held a Salmon Symposium from 10-11 May 2022, bringing together local, national and leading global aquaculture experts and practitioners with other stakeholders. Cutting edge innovation and directions in infrastructure and operations were put on the table, along with the components of sustainable contemporary food production systems.

We held another forum in mid-August 2022 that comprised two separate workshops, followed by a series of one-on-one conversations with targeted stakeholders to hear and record visions, aspirations, challenges and opportunities. These also explored trends and insights into topical issues and worked through a roadmap to see how various visions might be achieved.

The Food and Agriculture Organisation (FAO) states that aquatic food production is forecast to increase by a further 15% by 2030. Farmed seafood is providing the growing population with healthy and nutritious food that can be environmentally, socially and economically sustainable.

When managed well, it is a food system that can have a minimal impact on the ecosystem, contribute to social equity and help us mitigate and respond to the consequences of climate change.

OPPORTUNITIES

- Use evidence-based approaches
- Interaction between aquaculture and other blue economy industries (i.e. wind + aquaculture + seaweed)
- Mitigating challenge of climate change
- Innovation driven
- Decarbonisation of food and farming
- New species development + new markets
- Support for new supplies chains in Tasmania
- Sustainability focused
- Carbon credits
- Circular economy and repurposing
- Leading protein of choice/normalising aquaculture as farmed protein
- Research to understand offsets
- R&D to improve practices and infrastructure
- Nature balance sheet and environmental credits
- Incubation funds for start ups
- Defined land and marine areas (e.g. WA and QLD)
- Better governance structure
- Regulation matches community expectation
- Better planning and integrated marine management
- State-wide marine plan
- The best available evidence
- Ability to meet 30% by 2030 marine protection
- Diversified industry
- Future blue economy industries to learn from salmon industry failure
- Rethink for truly sustainable – economically, environmentally, socially
- Community has a voice in the place they live
- Equitable prosperity/improving returns from use of public waterways/royalties
- Reducing carbon footprint

Key themes we heard included:

- **a stronger focus on sustainability**
- **delivering carbon positive and nutrient neutral aspirations**
- **building stronger community relationships**
- **demonstrating the collaboration, scope and achievements of current industry**
- **introducing integrated planning for the marine estate**
- **demonstrating evidence-based actions**
- **continuing to support innovation & R&D**

CHALLENGES		
» Resilient, cohesive government » Effective marine spatial planning » Regulatory and planning certainty and standards » Government creating environment of public trust in science » Balance sheet/social balance/cumulative impacts » Collaboration » Workforce development » Lack of understanding of aquaculture » Biosecurity » Capability increase to meet GHG emission targets » Maintain competitive advantages	» Mega trends – climate change, population growth, food security » Managing community and stakeholder expectations » Communicating robustness of evidence » Concept and actions to move toward neutrality » Science communication » Not telling story well » Ecosystem stewardship » Keeping pace with global trends and innovation » Attracting and retaining the right people » Lack of transparency » Lack of integrated management	» EPBC Act reform and impact on aquaculture » Lack of regulation and impetus to do better » Transparency » Adaptive management not working (need precautionary approach) » Warming waters » Climate change » Carbon intensive/reduce carbon footprint » Use of public waters » Pests inherent to aquatic systems » R&D to improve practices and infrastructure

Key themes we heard included:

» **lack of trust in both government and industry** » **the need to communicate with impact** » **need to build workforce pride and ensure workforce planning**	» **demand for more transparency** » **demonstrably responsible use of public water** » **commitment to work on climate and zero carbon and nutrient aspirations**

Full report can be found at: https://blueeconomycrc.com.au/reports/

AMBITION

We encourage the adoption of a contemporary ambition as a new focus for Tasmania's approach to sustainable ocean economies and ocean stewardship.

This ambition offers the chance to achieve a shared commitment to Tasmania's ocean health and wellbeing where existing, new, emerging and transitioning ocean industries all have an important place and role to play.

SIX OPPORTUNITIES

We cannot achieve a sustainable ocean economy by simply 'adding up' the compliance activities of individual sectors.

Different ocean industries operate in the same ocean and same ecosystems at the same time.

The interconnectedness of these industries and the ocean means that a narrow or short-term vision and targets for a single sector can impact other sectors and risk the health of the oceans.

We need a paradigm shift and this requires a new model of governance.

We have identified six opportunities that we argue will collectively support achieving our ocean ambition and position Tasmanian aquaculture, with a focus on salmon farming, beyond 2033.

We have identified these opportunities following a deep dive into Tasmania's current policy, regulatory and planning platform, drawing on what we have heard from our stakeholders and with reference to case studies and learnings from other jurisdictions and other ocean users.

1. **Integrated ocean management**
2. **Contemporary ocean leadership**
3. **Contemporary ocean planning and regulation**
4. **Building an ocean economy balance sheet**
5. **Meaningful collaboration**
6. **Contemporary ocean industries | Tasmanian salmon**
    - » Supporting sustainable food
    - » Growing the ocean workforce
    - » Growing aquaculture diversity and opportunity
    - » Driving innovation
    - » Decarbonising operations

Integrated Ocean Management

Tasmania's salmon farming industry and its future potential should be considered alongside other ocean industries and ocean services as part of an integrated approach to managing the ocean estate.

This approach would provide existing industries as well as new, emerging and transitioning industries certainty about policy priorities, principles and what matters to the Tasmanian community.

Establishing integrated oceans management can also facilitate building trust with government, industry, recreational users, community and interest groups based on an understanding of policy, participation and shared (and conflicting) values.

Moving beyond a sectoral approach to integrated ocean management introduces a wholistic lens that balances sustainability and resilience of marine ecosystems with ocean uses to optimise the overall ocean economy.

Integrated oceans management draws from ecosystem-based management and adaptative management and includes marine spatial planning evidence-based decision making, frameworks and clear principles.

GOAL: Deliver an integrated oceans management framework.

ACTIONS	IMPACTS
» Stakeholders to engage in courageous conversations with the aim of developing a commitment to integrated oceans management » Develop an integrated oceans framework, including establishing a participatory process for stakeholders to contribute » Stocktake national and international EBM and MSP developments, threats, challenges and opportunities. » Undertake an audit of existing sectoral spatial measures » Develop a marine spatial planning framework » Investigate building restorative economies in ocean spaces	» Industry and user certainty » Maintenance of healthy and productive ecosystems » Knowledge-based planning and management » Delivering sustainable development through integrated planning and management » Increased transparency through access to reporting and monitoring information

Case Study - NSW Marine Estate Management

The NSW Marine Estate Management Strategy 2018 - 2028 outlines how to protect and enhance their waterways, coastline, and estuaries over the next ten years.

Actions in the Strategy have been determined by:

» The range of values people have for the marine estate – social, cultural, environmental and economic
» How to tackle the most significant threats to these values (identified in the statewide Threat and Risk Assessment)
» Widespread stakeholder and community feedback

The Strategy guides how all actors can work together for a better marine estate now and into the future. The NSW Marine Estate Strategy delivers outcomes through the following initiatives:

» Improving water quality and reducing litter
» Delivering healthy coastal habitats with sustainable use and development
» Planning for climate change
» Protecting the Aboriginal cultural values of the marine estate
» Reducing impacts on threatened and protected species
» Ensuring sustainable fishing and aquaculture
» Enabling safe and sustainable boating
» Enhancing social, cultural and economic benefits
» Delivering effective governance

Contemporary Ocean Leadership

A new and contemporary approach to leadership will be required to grow a sustainable and equitable aquaculture industry and drive ocean stewardship.

The ocean is a shared space.

Industry, community, government and regulators all have leadership roles to play.

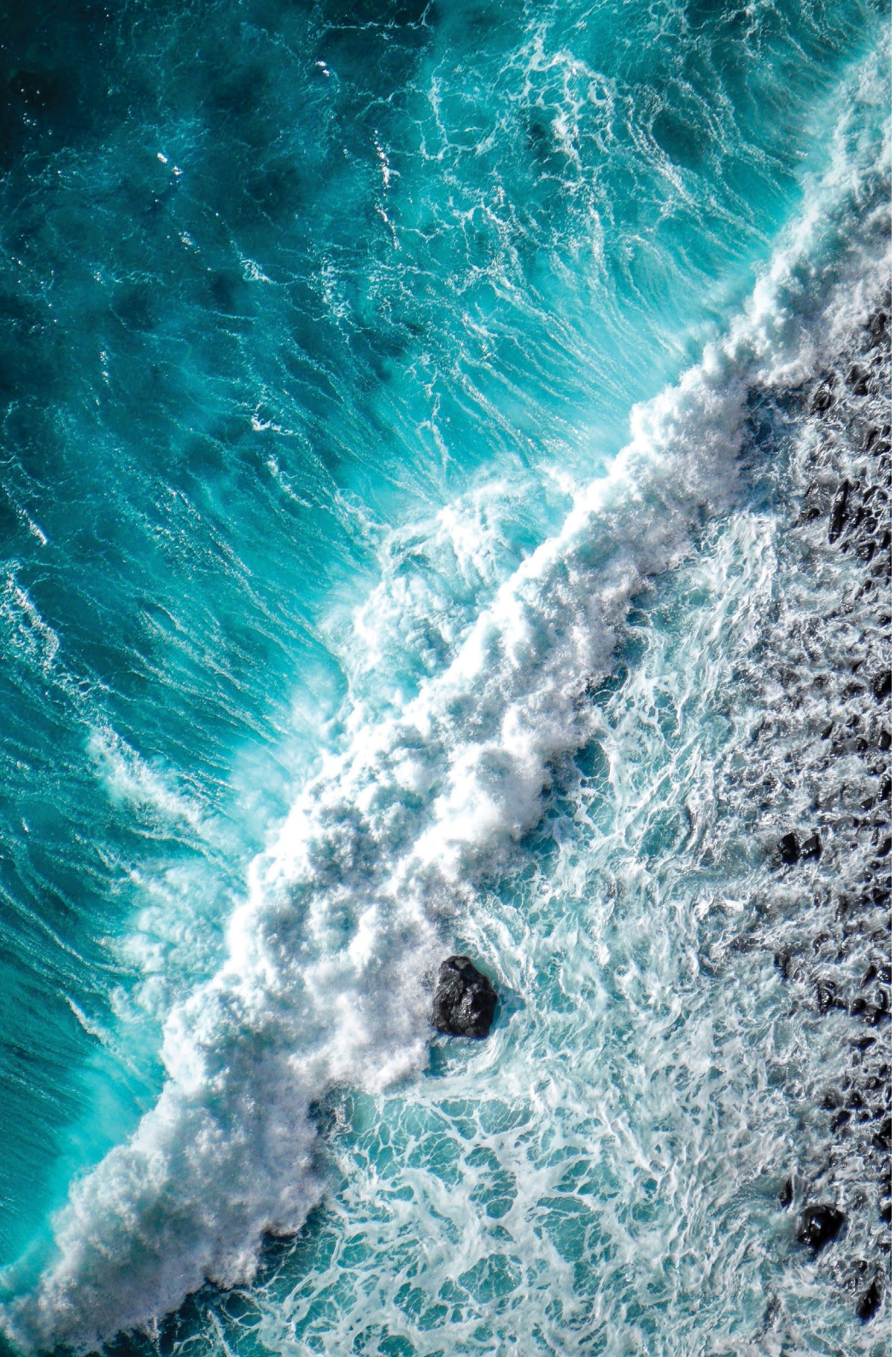
Collectively, they need to adopt a shared ambition, develop and implement a clear policy and planning framework to give it effect and then monitor, evaluate and improve performance over time. This requires leadership. Leadership that sets a path, drives transformative change and encourages new ways of working together.

Globally, there are several transformative commercial and intergovernmental ocean leadership models, such as SeaBOS and the High-Level Panel For a Sustainable Ocean Economy. SeaBOS involves ten of the world's largest seafood companies representing over 10% of the world's seafood production.

Together with leading scientists across disciplines and universities, they are exploring transformative risks and opportunities for the global seafood industry and key impact areas. The Ocean Panel is a unique global initiative led by serving heads of state and government from around the world, including Australia's Prime Minister, who are building momentum for a sustainable ocean economy, informed by leading global experts and practitioners. It aims to advance a more prosperous and resilient future for people and the planet.

Tasmania can apply this thinking to our oceans. In the case of Tasmania's aquaculture industry, Tasmanians are very aware of the industry's significance. On the other hand, 20% of Tasmanians currently oppose the industry citing concerns relating to environmental protection, animal welfare and transparency. Those concerns can often be amplified through TV, newspapers, radio and social media.

The debate is characterised on all sides by mistrust, assertions and blame. Whilst broader community sentiment has remained constant and positive, the status quo will not lead to a thriving, sustainable and equitable aquaculture industry. Contemporary ocean leadership can drive a more balanced and less divisive conversation around Tasmanian aquaculture and the oceans more generally.



GOAL: Delivering a sustainable and equitable ocean economy.

ACTIONS	IMPACTS
» Adopt and champion a clear, bold and shared ambition for a sustainable and equitable ocean economy » Align policy, strategy and activity to deliver ambition » Be transparent about activities, impacts and dependencies » Set clear timeframes and communicate performance » Invest in ocean literacy, blue knowledge and technological innovations	» People and environment benefit from an equitable and sustainable ocean economy » All stakeholders heard and respected » Improved knowledge, confidence and trust in the ocean economy » Increased business confidence and investment » Tasmanian led best practice

Features Of Best Practice

» **Shared ocean**
Recognition that the oceans are owned by all and how we share the space impacts communities, business and the environment.

» **Comprehensive**
All stakeholders have a leadership role in how we use the oceans: government, regulators, community and industry.

» **Delineation of roles**
There is a clear delineation of the leadership roles of community, industry, government and regulators.

» **Accountability**
Leaders are accountable for their role, actions and commentary, both for successes and failures.

» **Partnerships/collaborations**
Pursuing collaborations between governments, regulators, industry and communities to deliver shared objectives

» **Trust**
Evidence is collected and transparently shared. Commentary, narrative and assertions are based on evidence.

» **Flexible**
Open to new ideas and knowledge and prepared to adapt.

Contemporary Ocean Planning and Regulation

The challenge is to develop contemporary fit for purpose frameworks that drive innovation by providing business with confidence to invest while protecting the interests of the community.

Aquaculture is changing rapidly. How and what we farm in the oceans is changing. What's best practice today, will not be in the future.

Decarbonised nutrient neutral aquaculture systems present new opportunities and challenges. Yet there are examples where the introduction of sustainable aquaculture being stifled by outdated or poorly designed policy frameworks.

New species, selective species, polyculture, automated feed centres, well boats, stronger pens, next generation and new aqua-feeds and large-scale RAS are changing what is possible.

New risks will emerge while others can be retired. Rapidly evolving sensor technology, communications, data analysis, machine learning and the development of increasingly sophisticated modelling is revolutionising our ability to monitor and understand the natural environment leading to today's methods becoming redundant tomorrow.

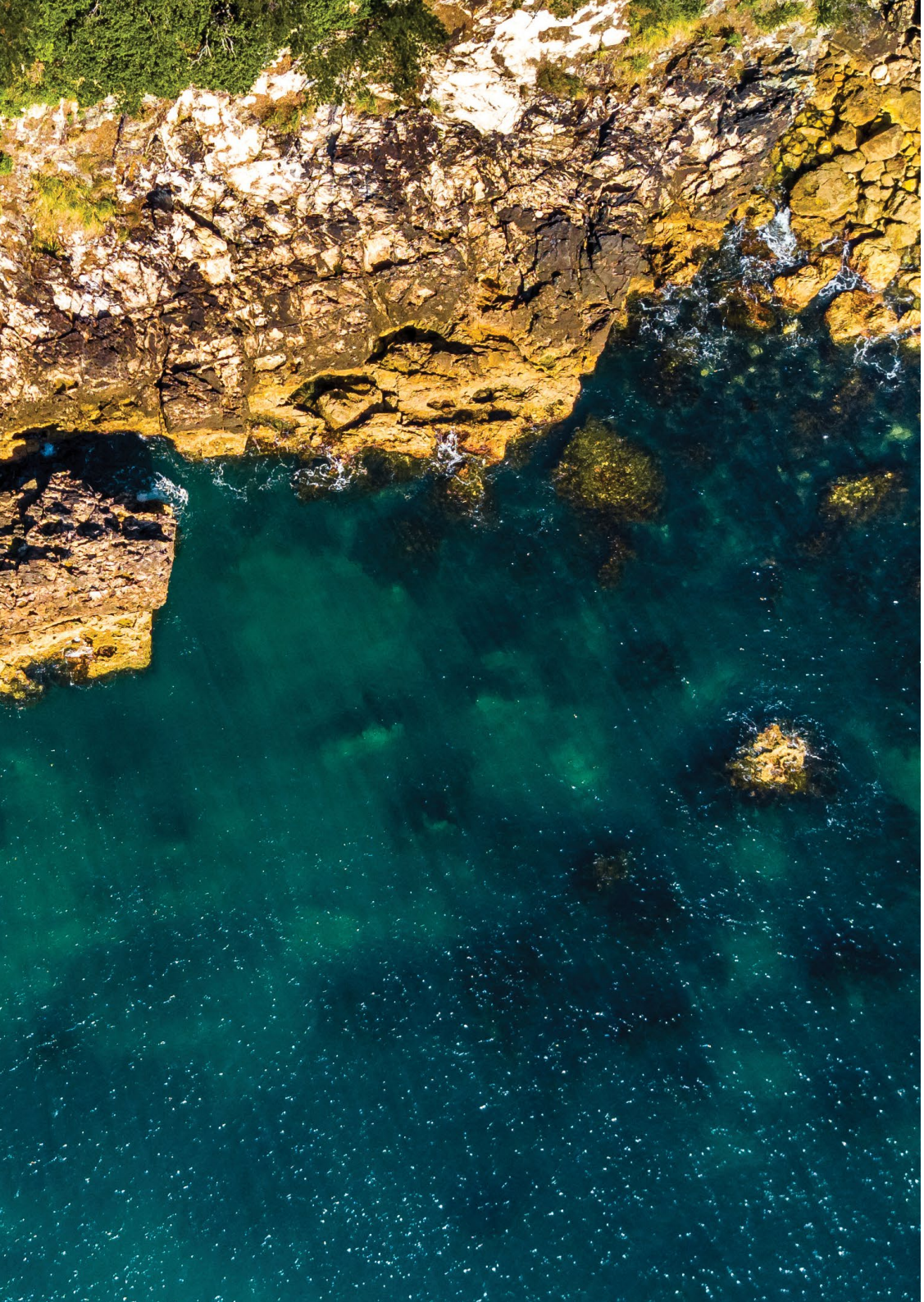
With the increasing economic and social importance of aquaculture the demand for transparent evidence-based planning and regulation will continue to increase. Risk and acceptable change need to be transparently described and understood. Trusted data needs to be transformed into knowledge that is used to inform the community and consumers.

For Tasmania to remain globally competitive for investment, the policy framework needs to be responsive to opportunity, provide timely decisions for investment and be trusted by business and the community. It needs to accommodate the long investment time horizons for capital deployment, which then underpins the certainty to invest and create sustainable employment.

Policy responses will themselves need to be innovative and forward looking. This requires clear articulation of the desired policy outcomes and choice of the best policy tools for delivery.

GOAL: A planning and regulatory environment that attracts and enables sustainable aquaculture while balancing social, economic and environmental interests.

ACTIONS	IMPACTS
» Develop a planning and regulatory environment that incentivises emerging technologies and innovative solutions » Remove regulatory barriers to innovation » Develop regulation that is flexible, adaptive to change and transparent » Use outcome based regulatory measures » Ensure licence and lease conditions remain current removing unnecessary, inefficient or superseded regulation » Ensure community interests are considered in planning and regulatory decisions » Harmonise approaches across jurisdictions	» Increased community confidence » Reduced business cost and risk increased investment in sustainable activities » Increased State and business competitiveness » Long term, high value jobs in regional communities » Increased innovation for sustainability



Features Of Best Practice

- **Forward looking and agile**
  Planning and regulation across sectors should actively consider emerging and over the horizon disruptions and be responsive.
- **Innovative**
  Regulatory approaches should be sufficiently flexible to make use of new technologies, where relevant. For example, new technologies can revolutionise assessment and management of risk.
- **Adaptable and Flexible**
  Regulation should be technology neutral and be adaptable and flexible to rapidly changing technologies. Regulatory failure occurs when old regulations and old ways of doing things fail to keep up with new circumstances.
- **Responsive Investment**
  Requires timely decision making.
- **Evidence based**
  Robust data and contemporary modelling should be used to develop, monitor, evaluate and review the effectiveness and efficiency of regulation.
- **Strong capability**
  Planners and regulators should have the appropriate skills, capability and access to expert advice to develop and implement regulation.
- **Coordinated**
  Planning and regulation should be coordinated and, to the extent possible, harmonised to share data and experiences across sectors and across jurisdictions.
- **Efficient**
  Best practice Regulatory Impact Assessments should be undertaken for all major policy decisions. Regulation shouldn't be the default option: the policy option offering the greatest net benefit – regulatory or non-regulatory - should be the preferred option. All regulation should be periodically reviewed to test its continuing relevance.

Building an Ocean Economy Balance Sheet

Sustainable growth of Tasmania's salmon farming industry should be defined by the capacity of the natural system – using an ocean economy balance sheet. Balanced with nature and supported by innovation.

By adopting a broader balance sheet we can move away from economic and production growth targets, and begin promoting growth and operations which align with our natural, social and economic 'ESG ecosystem' that industries are operating in. This allows for a new way of planning, communicating and reporting on progress.

A system-wide balance sheet using ocean impact accounting could provide a unique insight into the trade-offs of various activities impact against defined ESG clusters (i.e. GHG emissions, freshwater, biodiversity, waste, social). This will allow industry, government and the community to determine how best for industry (and or nature) to then minimise/eliminate/offset/restore those impacts through innovation and other actions to deliver an overall neutral or even positive impact across a defined geography. This approach offers ocean industries efficiency, reduces risks, increases transparency, and reduces sectoral inefficiencies by introducing wholistic ESG value mapping and reporting.

While the focus is on impact, this can also provide credible peer reviewed evidence that can improve the conversation around sustainability when it comes to farmed seafood or other ocean industries.

GOAL: To establish an oceans economy balance sheet to support government and industry decision making and communication of ESG impacts across seascapes

ACTIONS	IMPACTS
» Map ESG values » Map First Nations cultural values » Develop an oceans economy balance sheet model » Audit contemporary ocean mapping and data sets, linking to the Atlas project » Stocktake national and international EBM and dynamic MSP developments, threats, challenges and opportunities » Profile and support nature-based solutions – i.e wetlands and seaweed for removing nutrients » Audit circular economy opportunities with a view to develop a transition plan to reduce emissions, freshwater usage and waste across the value chain.	» Reduced risk for new, emerging and transitioning industries » Enhanced ecosystem understanding and oversight of cumulative impacts » Incentives for innovation and investment in achieving neutral and positive impact on identified ESG values » Promoting nature-based solutions in the industry » Increase circular economy outcomes and connections across waste providers and industry

Case Study - Ocean Accounts

The Global Oceans Accounts Partnership outlines that ocean accounts organise social, economic and environmental information to enable coherent measurement of progress towards the sustainable development of the ocean, in line with the United Nations Sustainable Development Goals and other relevant national, regional and global commitments.

Ocean accounts integrate four key components:

- Macro-economic accounts from which economic measures such as GDP are derived and from which legal, illegal, unreported and unregulated activities can be accounted for.
- Environmental-economic accounts that explain assets and flows, wastes, expenditures, taxes and subsidies.
- Ecosystem accounts which agree on a spatial framework or the extent, condition, biodiversity, services and value of ecosystems.
- Structured data on ocean beneficiaries, technology, governance and management.

Ocean accounts provide countries with the means to go beyond GDP to measure and manage progress towards ocean sustainable development.

Meaningful collaboration

Fostering a collaborative approach to ocean-related partnerships and participation will drive meaningful and shared ocean stewardship.

The current relationship between interest groups, sections of the community, industry and government is not a trusted one. We need a reset. Improving this relationship would give greater confidence to most Tasmanians, including those who do not maintain a regular interest in aquaculture.

Interest groups are calling for meaningful engagement with both industry and government. This includes participation in both the planning processes for marine farm development and their ongoing operations. However, increasing engagement must consider the voluntary nature of interest groups and options to support participation should be factored in.

Interest groups and those that value oceans are seeking a more holistic approach to managing and reporting on the health of the marine estate. The absence of government-led policies for the ocean estate, including on marine protected areas, has driven a perception that the government favours sectoral interests over contemporary and integrated oceans management.

GOAL: Build ocean stewardship through meaningful stakeholder relationships and collaborations.

ACTIONS	IMPACTS
» Introduce appropriate consultation mechanisms -i.e., ocean advisory groups (beyond single sector) » Co-develop a pledge through peak bodies (i.e. Seafood Industry Australia's Pledge) » Collate existing ocean industry best practice principles, code of practice, standards and/or models for engagement and other topical issues (well boats, wildlife, marine debris, sustainability, etc) and develop new ones for gaps » Establish community access programs including for example: annual community tours and/or open days, symposiums for example » Continue investigating perceptions and sentiment » Map material topics and values by geographies	» Respectful participation » Scheduled and regular engagement » Understanding what matters to community » Increase in ocean literacy and stewardship

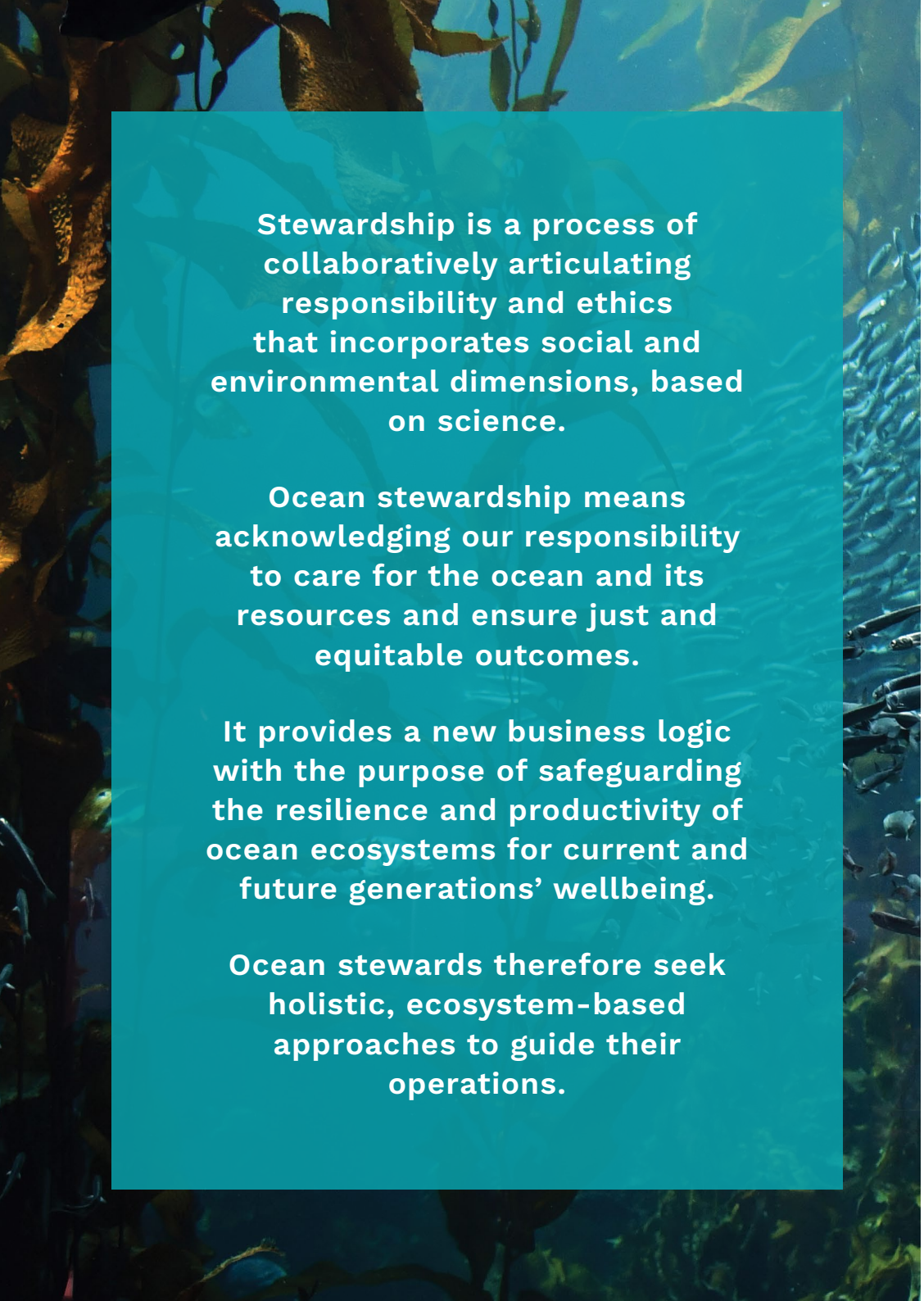
Case Study - NSW EPA Partnerships

NSW EPA has developed a contemporary approach to partnerships, which are seen as collaborative relationships that deliver solutions to complex problems.

Their partnership approach involves two or more groups coming together to address a common environmental challenge, combine resources and competencies and share risk to maximise value creation and deliver mutual benefit.

They are context specific and formed to address a specific challenge or issue and they may be short or long term. Every partnership is unique, but there are some key attributes that lead to effective partnerships.

- **Collaborative**
  Longer-term, non-transactional relationship between multiple parties.
- **Cross sector**
  Includes different stakeholder types such as government, civil society, business, NGOs, and academia.
- **Shared interest**
  Overlapping interest around an environmental challenge – if there is a shared problem, there is a strong reason to partner.
- **Compatibility**
  Organisational mandates, risk appetite and conflicts of interest.
- **Complementarity**
  Deliberately seeking difference in skills, expertise, channels and assets to improve or emphasize value.
- **Sharing of risk**
  All parties share risk and have an incentive to engage.
- **Significant synergies – win/win**
  The outcome from partnership approach is much greater than single organisation approach with conventional supply contracts or grants. Each individual partner achieves a net benefit.



Stewardship is a process of collaboratively articulating responsibility and ethics that incorporates social and environmental dimensions, based on science.

Ocean stewardship means acknowledging our responsibility to care for the ocean and its resources and ensure just and equitable outcomes.

It provides a new business logic with the purpose of safeguarding the resilience and productivity of ocean ecosystems for current and future generations' wellbeing.

Ocean stewards therefore seek holistic, ecosystem-based approaches to guide their operations.

SIA Pledge

Our Pledge

We are the Australian seafood industry, and we are committed to putting the best Australian seafood on your table now and for generations to come.

To ensure we do this in ways we are all proud of, we promise to:

- Actively care for Australia's oceans and environment and work with others to do the same
- Value our people, look after them and keep them safe
- Respect the seafood we harvest and the wildlife we interact with
- Be transparent and accountable for our actions
- Engage with the community and listen to their concerns
- Continually improve our practices

This is our pledge to you.

Source: https://seafoodindustryaustralia.com.au/our-pledge/

Contemporary ocean industries Tasmanian salmon

Contemporary ocean industries, like Tasmanian salmon, are generally highly innovative, capital intensive, rapidly changing, forward looking and supported by a highly skilled workforce.

Contemporary industries are now strongly driven by their ESG reporting obligations and retailer expectations.

While the previous 5 opportunities are about resetting Tasmania's ocean agenda and embedding the salmon industry into these broader initiatives, this opportunity includes five focus areas for action that are fundamental to taking the Tasmanian salmon industry beyond 2033.

These Tasmanian salmon focus areas include:

1. Supporting sustainable food
2. Growing species diversity
3. Driving innovation
4. Decarbonising operation
5. Growing the workforce

1. Supporting sustainable food

Consumers preferences and experiences drive food production policies and practices and are critical to accessing and maintaining markets.

Companies are encouraged by global peak bodies, consumers, and investors to move from corporate social responsibility to a more ambitious form of corporate stewardship. This move may be further reinforced by shifts in consumer behaviour aimed at supporting companies that are acting ethically and sustainably.

Consumers can access relevant information through government, industry and company disclosure of practices, targets and sustainability journeys.

Both informed consumer choice as well as industry diversity (i.e., species diversity but also production/operational model diversity) can offer pipelines of different products for the market.

GOAL: Tasmanian salmon supplies seafood of the highest quality, nutritional value and sustainability credentials to meet domestic retail needs and export markets, exhibiting world's best practice.

ACTIONS	IMPACTS
» Pilot Tasmanian branded traceability platforms through peak bodies » Develop Tasmanian seafood nutrition platform » Monitor Tasmanian brand sentiment » Encourage real time data disclosure for oceans (beyond single sector) » Deliver visual transparency of activities in shared waterways » Establish a trans-Tasman investigation into climate impacts on salmon farming	» Consumer awareness increased for informed decisions » Accessible understanding of impact and progress against material topics » Shared stewardship of the oceans between consumers and producers » Improved information flow and transparency » Support for Tasmanian salmon » Tasmanian salmon industry climate ready – or adaption pathway » Progress toward the SDG's

Case Study – Adapting to Climate Change

The outcome of the twenty-sixth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) – COP26 – Glasgow Climate Pact, addressed issues and challenges in seven action-oriented areas.

It placed unprecedented emphasis on adaptation, highlighting the urgency of scaling up adaptation action.

One of the greatest threats to Tasmania's aquaculture operations is climate induced changes to the local environment. Warmer waters can introduce problem species like jellies, algae, pathogens and disease as well as stock stressors and losses.

In the case of salmon farming globally, the industry is addressing these threats through: selective breeding, density reduction, oxygenation solutions and shifting further to open oceans (deeper, higher energy and not enclosed). Other options available include mobile pens (NZ and Chilean research) and RAS modelled bespoke vessels.

2. Growing the ocean workforce

The future workforce for the Tasmanian salmon industry is adaptable and transferable across marine industries.

Aquaculture directly employs over 2,975 people around Tasmania, and like many other Tasmanian industries, faces periodic significant shortfalls. Growing this workforce for the future is an immediate priority at a time when sectors across the economy face labour shortages and are in stiff competition with one another.

With increasing complexity of operations, the future ocean economy workforce needs to be ocean and ocean industry literate and embrace sustainability.

The workforce will include ICT, feed and nutrition, transport, welfare, corporate, research, engineering, waste, community engagement, safety, and precision farming.

Most of the roles required for the ocean industries of the future will require specific training.

GOAL: To build an oceans workforce to support the sustainable growth and diversification of aquaculture and ocean industries.

ACTIONS	IMPACTS
» Develop and fund a workforce action plan to build a skilled, qualified, and diverse workforce » Promote courses for a range of roles via a one stop shop » Develop oceans and aquaculture literacy to build knowledge and understanding in the industry	» Pipeline of skilled workers » Accessible targeted training and education » Skilled workforces for emerging industries

Case Study - New Zealand

New Zealand has produced a collaborative cross-Government approach to growing the range of people and skills the aquaculture industry will need to achieve its growth strategy by addressing education and skills gaps, understanding perceptions, mapping career pathways and future-proofing the workforce.

Building blocks of the workforce action plan includes:

- Pathways & promotion
- Perceptions
- Projections
- Pastoral care
- People progression
- Immediate shortfall
- Invest in system transformation

3. Growing aquaculture diversity and opportunity

Diversifying the State's aquaculture industry and transferring Tasmania's approach to other states' will drive a more inclusive governance approach.

Existing industries such as oysters, and emerging industries such as seaweed are already contributing to Tasmania's leading role in Australian aquaculture.

Future aquaculture species for Tasmania, include native seaweeds, striped trumpeter, greenback flounder, yellowtail kingfish, short-finned eels, native oysters, scallops, seahorses and ornamental fish.

Recent successes include seaweed aquaculture and the commercialisation of tropical rock lobster aquaculture which has resulted in a Tasmanian company founding the first commercial rock lobster farm.

Leading the way in Australian aquaculture

Oysters

Seaweed

While it is in Queensland it is based on Tasmanian innovation and entrepreneurship. There is also an interest in collaborating with First Nations on aquaculture-based habitat restoration and regenerative projects (i.e., Agassi oyster) plus habitat restoration through aquaculture including kelp and handfish.

Tasmania can also pioneer the potential for temperate marine multispecies the potential for multispecies systems, including piloting growing seaweeds and shellfish alongside salmon farming.

GOAL: An innovative aquaculture industry that supplies a diverse range of sustainably grown seafood of the highest quality and nutritional value to meet domestic retail needs and export markets, and of what Tasmanians are proud.

ACTIONS	IMPACTS
» Develop values-based approach to identifying new aquaculture species and systems to consider for diversification » Develop an evidence-based approach to prioritising new aquaculture species and systems » Identify different types of investors to support diversification of aquaculture » Design an outcome-based approach for pathways to new aquaculture that includes R&D, pre-commercial production and commercialisation steps » Ensure community involvement in aquaculture diversification to enable informed discussion about multispecies systems and endemic species	» Increased aquaculture diversity (as measured by increased number of species, systems and "products") - Increased innovation and sustainability, Decreased business cost and risk » Increased employment and career pathways through aquaculture and associated activities. Including long term, high value jobs in regional communities » Increased aquaculture sustainability (measured and evidence based) - increased community confidence » Increased global recognition for Tasmanian brand and for State based approach to aquaculture diversity - increased state and business competitiveness

Case Study - Seaweed

Sea Forest entered Tasmania as a sustainable producer of high quality Asparagopsis seaweed.

Sea Forest is commercialising its technology and know-how for cultivation, harvesting and production of Asparagopsis and is the first and largest supplier of Asparagopsis based products in the world. These operations include researching the use of the seaweed as a livestock feed supplement which could not only increase productivity but also reduce methane emissions (the major greenhouse / climate emergency gas).

4. Driving innovation

To remain competitive, the aquaculture industry must continue to innovate.

Tasmania is home to a recognised, successful, innovative, and collaborative R&D and innovation community that has a strong history of collaborating with the salmon industry. Strategic investment in research, engineering capabilities and innovation provides an opportunity to responsibly grow and improve Tasmania's existing ocean industries while opening doors for new, emerging, and transitioning industries.

This will also require collaboration between the local innovation industry linked to the worlds best researchers, wherever they are located.

Tasmania is home to a recognised, successful, innovative and collaborative R&D and innovation community.

One of the biggest barriers to achieving growth in marine based aquaculture is overcoming the challenges of sustainably operating in high energy open ocean waters. This requires operating in harsh weather environments and with reduced weather windows for operations. Work practices and technology need to be developed to withstand these types of challenges.

Aquaculture can build on the expertise and technology developed in established ocean industries providing new opportunities for restructuring, innovation and growth.

There are also R&D opportunities to support emerging aquaculture feed directions, nutrient removal and bioremediation, and circular economy responses. This could include boosting the efforts already underway by feed companies in novel ingredients (i.e., algal oil, single cell ingredients and insect meal) as alternative protein and nutrient sources. There are also, the opportunities for proving up nutrient neutral production through a combination of feed efficiency and nutrient harvesting through seaweed and shellfish.

GOAL: Support the technological requirements that unlock open ocean aquaculture to get the right structures in place.

ACTIONS	IMPACTS
» Develop cross sector investment and R&D plans » Pilot ocean renewable energy generation on a marine farm » Increase the availability of capital to stimulate innovation and growth » Promote R&D projects and share knowledge » Facilitate networking events and increase innovation uptake within the industry » Support novel feed ingredient research » Audit circular economy opportunities with a view to develop a transition plan to reduce emissions, freshwater usage, and waste across the value chain » Pilot nutrient removal and bioremediation production models » Rally businesses and governments behind design and implementation of circular economy solutions	» Alignment of research and innovation capabilities and programs to support these ten opportunities » Digital capability is lifted » Risks associated with innovation are shared » Increase circular economy outcomes and connections across waste providers and industry » Reduced emissions

Case Study - Tasmania

The introduction of precision farming to salmon operations - integrated feed, welfare, production, and environmental management experience has been a game changer.

Real time in-pen/pond data, visuals and sensing across stock behaviour, climatic and environmental monitoring coupled with augmented AI and localised predictive tools are supporting improved yields, reduced feed wastage, reduced environmental impact, an improved agility to respond to natural challenges and informed on-the-spot decisions.

5. Decarbonising aquaculture operations

As the aquaculture sector moves operations further offshore and into open ocean, the sector is encountering new challenges to access clean and reliable energy.

Without access to grid-connected power, energy-intensive offshore aquaculture operations such as feeding barges become reliant on diesel generators with associated costs, risks and carbon emissions. However, the shift into energy-intensive offshore wave and wind environments presents an opportunity to utilise an untapped energy source.

Through the introduction of novel oceanic renewable energy sources like wind, wave and transitional solutions that replace diesel, aquaculture can continue to offer healthy seafood produced with a low to neutral carbon footprint.

There is an opportunity for industry to set targets and roadmaps to reduce total emissions from the aquaculture fleet. Battery electric systems and alternate fuels like hydrogen and methanol will enable zero emission fleets. Increasing the number of pilot and demonstration projects in Tasmania and promoting the subsequent technological development and commercialisation and can assist the transition. These learnings could then be rolled out across ocean industries with similar fleet profiles.

The shift into energy-intensive offshore wave and wind environments presents an opportunity to utilise an untapped energy source.

To support the decarbonisation of Tasmania's aquaculture industry on water and on land.

ACTIONS	IMPACTS
» Introduce whole of industry life cycle assessments for aquaculture sectors » Develop sector-based emissions reduction and resilience plans » Develop an aquaculture vessel decarbonisation roadmap » Pilot ocean renewable energy generation on an open ocean marine farm in State waters » Where appropriate, look to grid connection for offshore operations	» Net zero farming operations » Reduced diesel usage » Potential to generate ocean energy for farms and into local grids for use by coastal communities

Case Study - Life Cycle Assessment

The Tasmanian salmon industry has 100% life cycle assessment coverage, meaning their knowledge of their GHG emissions is comprehensive.

The industry is using this information to introduce change practices to current operations while also exploring improvements and innovations that go above efficiency reductions.

Some solutions are out of reach due to current capabilities and cost, and further attention is required. Parallel to this, the renewable energy industry is developing fit for purpose solutions. Many of these seek to utilise the power of the ocean, or green fuels, such as hydrogen and methanol.

FUTURE

Future - Beyond 2023

By grasping this ambition and capturing these six opportunities, ocean industries like aquaculture and salmon farming can be rebalanced with nature and supported by innovation.

Looking beyond 2033, the Tasmanian aquaculture industry could be characterised by the following attributes:

- Balancing growth with nature and innovation
- Adopting an ocean economy banking ethos
- Moving towards neutral farming (nutrients and carbon)
- Delivering circular economy solutions
- Towards tailored seafood to most efficiently contribute to human nutritional needs
- Strongly supported skill & technology-intensive supply chain
- Supporting a skilled workforce
- Respecting coastal communities' values
- Governing in the communities' best interests
- Ensuring Tasmania thrives

Tasmania's future aquaculture profile will be integrated, ambitious, innovative, balanced by nature and trusted.

A thriving Tasmanian aquaculture industry where sustainable growth will be defined by the capacity of the natural system – using a blue economy balance sheet. Balanced with nature and supported by innovation.

An ocean economy banking ethos moves beyond economic wealth and captures natural and social wealth and the investments and drawdowns from our oceans and our ocean industries. It moves beyond economic outputs alone and puts nature, people and impact into the equation. This offers an evidence-based approach that adopts the principles of ESG, ESD, natural capital, ocean accounting and seeks true prosperity.

It will be agile and able to navigate trends, capitalise on its competitive strengths and play a leading role in optimising and evolving Tasmania's 'blue' ocean outputs.

TRENDS & INFLUENCES	**Tasmania's aquaculture industry will be agile to navigate mega trends and ongoing influences:** » Community expectations » Consumer nutrition » Restoration ambitions » Corporate social responsibility » Ocean equity
COMPETITIVE STRENGTHS	**Tasmania will grow its privileged assets and strong industry performance including locking in a return on its ocean assets.** » Temperate climate » Mature governance » Available high energy oceans » Voluntary transparency & esg reporting » Mature and modern aquaculture industry » Existing infrastructure » Precision farming experience » Gateway to the temperate pacific, indian & southern oceans » Emerging novel feed sector » Strong r & d institutions and platform » Emerging circular economy & waste solutions
OUTPUTS	**Tasmania can lead the concept of an equitable 'ocean economy bank'.** » Blue food – finfish, shellfish, seaweed » Blue carbon and nature-based solutions- seaweed, seagrass, mangroves, wetlands biosphere » Blue leadership – culture, policy, planning » Blue energy – wind, wave, biofuels » Blue knowledge –literacy and data, education and training

The 2021 UN Food Systems Summit identified blue foods as a game changing solution in food system transformation and achieving progress of the Sustainable Development Goals (SDGs).

OCEAN FRAMEWORK

Setting an ambition is the first step in resetting Tasmania's approach to oceans and ocean economies.

The next steps would involve the Tasmanian government and stakeholders to:

- **Adopt** this ambition through the development of an **ocean strategy** that sets out policy and principles for an integrated approach to Tasmania's oceans.
- **Develop** a state-wide **aquaculture sector strategy** that sets goals, objectives, priorities, and actions in the context of the sustainable ocean economy ambition and provide the basis for an industry scorecard.
- **Develop** an **aquaculture investment and R & D roadmap** to guide investment and timelines to support achieving the strategy.
- **Develop** sub-sectoral **implementation plans** i.e., seaweed, finfish, shellfish, that guide sector specific needs and opportunities and provide the basis for a sub-sectoral scorecard.
- **Monitor and evaluate** the ocean strategy to ensure it remains current and is delivering the intended outcomes – the ambition.

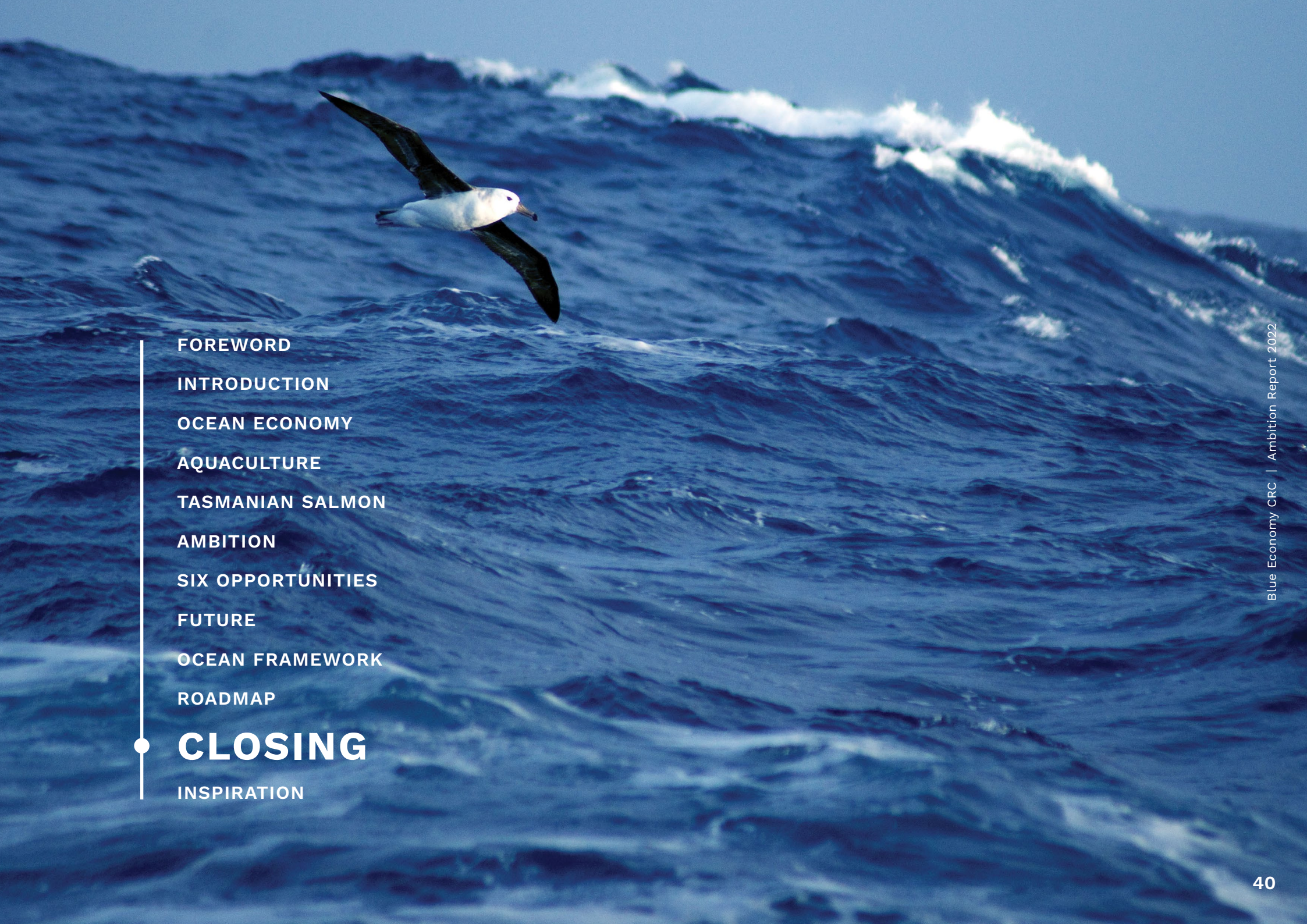
This suite of tools would clearly describe actions, measurable indicators, pathways and how government and industry would monitor and report against the ambition.

Based on successes in other jurisdictions and sectors, development, and implementation of these should be supported by transparent collaboration mechanisms for stakeholders, for example advisory groups and working groups, and apply contemporary leadership and best practice participation.

ROADMAP

Together, these are building blocks of a contemporary roadmap for ensuring Tasmania's oceans are healthy and productive, and that its ocean industries are thriving. The framework put forward in this document provides for an integrated approach to valuing the oceans while offering clarity through policy and principles for ocean industries and sectors like aquaculture. It offers salmon farming as a sub sector where we can pilot this approach. It re-introduces a focus on ocean biodiversity and ecosystems and contemporary ocean values like blue carbon and impact investment. And it boosts ocean stewardship while advancing ESG collectively and transparently.

TASMANIA'S OCEAN ECONOMY			
A sustainable ocean economy underpinned by our innovative industries and trusted stewardship of our oceans and the services they provide.			
AQUACULTURE SECTOR			
A thriving Tasmanian aquaculture industry where sustainable growth will be defined by the capacity of the natural system – using an ocean economy balance sheet. Balanced with nature and supported by innovation.			
COMPETITIVE STRENGTHS	» Temperate climate » Available high energy ocean » Mature and modern aquaculture industry » Existing infrastructure	» Voluntary transparency & ESG reporting » Precision farming experience » Gateway to the temperate Pacific, Indian and Southern oceans	» Strong R&D institutions and platform » Emerging novel feed sector » Emerging circular economy & waste solutions
SIX OPPORTUNITIES	1. Integrated oceans management 2. Contemporary oceans leadership 3. Contemporary oceans planning and regulation 4. Building an ocean economy balance sheet	5. Meaningful collaboration 6. Contemporary ocean industries | Tasmanian salmon: » Supporting sustainable food » Growing the ocean workforce	» Growing aquaculture diversity and opportunity » Driving innovation » Decarbonising operations
OUTPUTS	**Blue food** » Finfish » Shellfish » Seaweed	**Blue carbon & nature based solutions** » Seaweed » Seagrass biosphere » Wetlands	**Blue leadership** » Transparency » Industry confidence » Community trust » Integrated management	**Blue energy** » Wind » Wave » Biofuels	**Blue knowledge** » Ocean, sustainability and aquaculture literacy » Integrated datasets
NEXT STEPS	**OCEAN FRAMEWORK** » Adopt this ambition through the development of an **ocean strategy** that sets out policy and principles for an integrated approach to Tasmania's oceans. » Develop a state-wide **aquaculture sector strategy** that sets specific whole of industry goals, objectives, priorities, and actions in the context of the sustainable ocean economy ambition and ocean strategy. » Develop **aquaculture investment and R & D roadmap** to meet strategy. » Develop **aquaculture sub-sector implementation plans** i.e. seaweed, finfish, shellfish. » **Monitor and evaluate** the ocean strategy to ensure it remain current and is delivering the intended outcomes - the ambition				



CLOSING

Embracing this ambition will drive a more contemporary and holistic approach to managing Tasmania's oceans.

It will also provide the Tasmanian community with confidence that the productive use of the oceans is sustainable, equitable and in balance with nature.

Community and consumer expectations of more transparency in the decision making and use of public waterways as well as industry sustainability disclosure can be advanced through the adoption of an 'ocean economy balance sheet' that allows for ocean impact accounting, including understanding cumulative impacts in the familiar ESG format.

This provides a contemporary and enduring outlook for Tasmania's ocean economies, and offers policy clarity for new, emerging and transitioning industries.

Harnessing these six opportunities and the ocean framework will put governance of the Tasmanians aquaculture sector, and in particular the salmon sector, in a more strategic footing that is integrated into broader and more contemporary ocean policy, regulation, planning and leadership.

Though it may involve short term challenges and scrutiny, it will ultimately deliver transparency, accountability and work towards rebuilding trust and a foundation for genuine ocean stewardship and prosperity.

We are confident that supporting this ambition will drive an innovative sustainable aquaculture industry, balanced with nature and integrated into the Tasmanian way of life.

INSPIRATION

NEW ZEALAND

- Aquaculture Strategy. New Zealand Government.
- Aquaculture Strategy: Implementation Plan 2022. New Zealand Government.
- Accelerate the Aquaculture Strategy: Investment roadmap. New Zealand Government.
- Aotearoa New Zealand's Seaweed Sector Framework October 2022. National Science Challenges. Sustainable Seas.

AUSTRALIA

- National Marine Science Plan 2015–2025: The Midway Point

SCOTLAND

- Blue Economy Vision for Scotland. Scottish Government.

NORWAY

- An ocean of possibilities – the government's aquaculture strategy. Ministry of Industry and Fisheries.

COMMONWEALTH

- Commonwealth Blue Charter Shared Values, Shared Ocean A Commonwealth Commitment to Work Together to Protect and Manage our Ocean. Commonwealth Secretariat.

VICTORIA

- A sea of opportunities. Marine and Coastal Policy.
- Victorian Government.

NEW SOUTH WALES

- NSW Marine Estate Management Strategy 2018–2028.
- New South Wales Government.
- NSW Blue Carbon Strategy 2022-2027. New South Wales Government.

BLUE ECONOMY CRC PROJECTS

- Salmon Symposium. Blue Economy CRC.
- What We Heard Report. Blue Economy CRC.
- Project: Marine Spatial Planning for a Blue Economy
- Project: EMA & Integrated Reporting for Blue Economy

GLOBAL

- Towards Blue Transformation, FAO, 2022
- Transformations for a Sustainable Ocean Economy: A Vision for Protection, Production and Prosperity, High Level Panel for a Sustainable Ocean Economy
- SeaBOS Progress 2017-2022 Seafood Business for Ocean Stewardship

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BLUE ECONOMY
COOPERATIVE RESEARCH CENTRE

Australian Government
Department of Industry, Science and Resources

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