



AUSTRALIAN
**Prawn
Farmers**
ASSOCIATION

**Submission to the
Queensland State Development and Regional Industries Committee**

on the

FOOD (LABELLING OF SEAFOOD) AMENDMENT BILL 2021

9 February 2022

Submitted and directed to:

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The Australian Prawn Farmers Association

The Australian Prawn Farmers Association (APFA) is the peak representative organisation for the Australian farmed prawn industry.

Established in 1993, APFA represents the common interest of members and promotes and supports all aspects of the industry.

APFA provides the link for communications between growers and related sectors including infrastructure suppliers, the finance sector, retailers and exporters, technologists, researchers and all levels of government.

The nature and current status of Australia's prawn farm sector

The Food and Agriculture Organization of the United Nations' (FAO) latest worldwide statistics on aquaculture shows world aquaculture production of 82.1 million tonnes of aquatic animals with a value of approximately US \$250 billion (FAO, 2018). The forecast is that aquaculture will supply the majority of aquatic protein in people's diets by 2050 (FAO, 2018).

As demand for seafood continues to rise and wild-caught fisheries reach ecological sustainable levels, any substantial growth in seafood production will need to be driven by aquaculture (DAFF 2021).

In 2019-20 Australia's aquaculture sector represented 48 per cent of Australia's total seafood production with a value of \$1.64 billion dollars.

The Australian prawn farm industry is undergoing rapid and significant growth in production with the industry currently **valued at over \$130 million** in 2019-20 (Lobegeiger, DPI NSW, 2021). This is up from \$80 million in 2018-19.

98% of Australian prawn farms are located in Queensland.

Strong ongoing significant growth is planned in Queensland with the industry becoming an important regional economic driver including in the areas of regional investment, labour, new skills and training, increased transport investment and increased feed manufacture investment, all contributing to improved social and economic outcomes for regional communities.

Response to the Food (Labelling of Seafood) Amendment Bill 2021

The Australian Prawn Farmers Association (APFA) strongly supports the Food (Labelling of Seafood) Amendment Bill 2021 (The Bill).

Seafood is a much-loved product in Australia, and the current COVID pandemic has seen more Australian consumers seek locally sourced or produced food to support local economies and regional jobs. This in turn is encouraging a more direct relationship with the farmers and families who produce our food, including Australian farmed prawns.

Australian aquaculture, such as farmed prawns, has significant untapped production capacity. The Australian prawn farm industry is proud of our strong food safety reputation and highly regulated operational environment that produces high quality, sustainable farmed prawns.

APFA and the Australian Council of Prawn Fisheries (ACPF) work collaboratively investing in a joint industry marketing campaign “Love Australian Prawns”, aimed at providing confidence to consumers if they buy Australian prawns (whether wild caught or farmed) they can be confident it is Australian.

Seafood Industry Australia advises that seventy per cent (70%) of the seafood eaten in Australia is imported with the majority of this consumption in the food service sector – yet many people do not realise this. The omission of comprehensive labelling is misleading.

The Country of Origin Food Labelling Information Standard 2016, made under section 134 of the Australian Consumer Law, enabled consumers to make informed choices about seafood sold in the retail sector with product to be labelled with the country of origin.

Unfortunately, this was not expanded into the food service sector and should never have been exempt from the original labelling requirements.

The argument that considerable cost will be borne by the food service industry to implement CoOL does not measure up. Every seafood producer, wholesaler and retailer already provide labelled CoOL product to the food service industry.

Without CoOL legislation being expanded to include mandatory CoOL for seafood sold in the food service sector in Queensland, the consumer is not provided the necessary information to make an informed choice.

It is not about Australian seafood versus imported seafood or limiting the import of seafood, but a **transparent labelling process** to enable Australian consumers to make informed decisions when they dine out or purchase on-line.

Ultimately, consumer choice is the driver.

There is already a precedent set in many food services sectors with menus showcasing “Moreton Bay Bugs”, “Hervey Bay Scallops”, “Sydney Rock Oysters”, “Tasmanian Salmon” and so forth. Food service venues have wine lists that show the specific origin of the produce.

The Bill allows for the food service industry to simply indicate, at a minimum, an “i” after the seafood product to indicate it is imported.

An expansion of CoOL to cover all seafood sold in food service in Queensland is crucial to safeguard the future of our industry and the thousands of Australian families who rely on the Queensland seafood industry as a source of income, not to mention our iconic Aussie prawns enjoyed by so many Queensland tourists.

APFA hopes this loophole will finally close.

APFA welcomes the opportunity to discuss our response to the Food (Seafood Labelling) Amendment Bill 2021 if needed, and thanks the State Development and Regional Industries Committee for consideration of this critical issue to support the future of the Australian prawn farming industry and Queensland’s economically important seafood sector.

END

PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

Supporting a strong future for Australian aquaculture

Australian aquaculture sector

House of Representatives Standing Committee on Agriculture and Water
Resources

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Foreword

Australian aquaculture is a growing industry and has a strong positive outlook. As the world's growing population brings increasing demand for food, aquaculture is well positioned to meet the ever-growing desire for fish, particularly when wild stocks are under pressure from overfishing. Unlocking the full potential of Australian aquaculture requires barriers to growth to be identified and addressed, and the Committee has sought to make constructive suggestions to help clear any hurdles standing in the way of the industry's development.

Australian aquaculture already has a reputation for producing premium product and further improvements will strengthen our market position. An expanding Australian aquaculture sector will help meet domestic demand for seafood, boost exports and provide thousands of additional jobs, especially in regional areas.

Innovation is a key to the expansion of output and increased domestic and global market share. The Committee noted the example of offshore aquaculture. With investment in research and the development of new technology, together with appropriate regulatory changes that encourage investment, offshore aquaculture can contribute to a significant increase in total production. Innovations in recirculating aquaculture systems (RAS) also provide a means to produce fish in a self-contained, tank-based system with environmental controls, with minimal waste and low volumes of water consumption. RAS has many potential applications within Australia's aquaculture sector and could play an important part in the industry's future.

Aquaculture, like all industries, has its share of challenges and potential barriers to growth. The Committee has made a number of recommendations with the aim of overcoming these barriers.

The issue of biosecurity and potential threats from imported disease stands out as a key issue for the industry and for regulators. Strong biosecurity regulations are imperative for the growth of aquaculture because they are a prerequisite for investor confidence, while protecting Australia's reputation for high quality product.

Responding to consumer and community concerns about environmental standards and the ecological sustainability of aquaculture needs to be a high priority, both for producers themselves and for governments.

Future growth in the sector also depends upon the capacity to attract and retain skilled and unskilled workers, including provision of the education and upgraded skills to manage new and innovative technologies.

One of the central issues in the inquiry was the naming and labelling of seafood. The Committee was made aware of flaws in standards that could cause confusion amongst Australian consumers. To cite an example, 60 per cent of Australia's barramundi market is filled by an imported fish known internationally as Asian sea bass but sold in Australia as 'barramundi'. Most consumers would not be aware that they are likely to be eating an imported product. The Committee therefore supports reforms to labelling standards, including labelling of imported seafood products in foodservice settings.

The aquaculture sector can be adversely affected by inconsistent or overlapping legislation and regulations across jurisdictions. The Committee notes concerns from industry representatives, and recognises the efforts made by several governments to streamline processes and reduce red tape. The Committee supports the introduction of 'one-stop-shop' models of regulation management to reduce duplication and streamline regulatory approval processes.

I would like to conclude by expressing the Committee's appreciation to the organisations and individuals who made submissions to the inquiry and to those who appeared at public hearings. Your contributions were vital to the Committee's efforts to conduct a comprehensive investigation into the issues facing Australia's aquaculture sector.

I would also like to thank my colleagues in the Committee for their involvement in the inquiry and their constructive contributions to the report and its recommendations. Finally, let me express my appreciation for the hard work of the secretariat in supporting the Committee and bringing the inquiry to its completion.

Mr Rick Wilson MP

Chair

8 February 2022

Members

Chair

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Deputy Chair

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Stephen Sherlock, Inquiry Secretary

Michael Francis, Researcher

Ben Russell, Researcher

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Terms of Reference

The House Standing Committee on Agriculture and Water Resources will inquire and report on:

- a. the nature and current status of Australia's aquaculture sector;
- b. opportunities and barriers to the expansion of the aquaculture sector:
 - i. including ability to access capital and investment;
- c. opportunities to streamline and increase the effectiveness of the current regulatory frameworks that govern aquaculture activities in Australia; and
- d. the ability for businesses to access and commercialise new innovations to expand aquaculture.

Abbreviations

ABFA	Australian Barramundi Farmers Association
ABEI	Agri-Business Expansion Initiative
ACIAR	Australian Centre for International Agriculture Research
ACWA	Aquaculture Council of Western Australia
agvet chemicals	agricultural and veterinary chemicals
APFA	Australian Prawn Farmers Association
AIMS	Australian Institute of Marine Science
ARENA	Australian Renewable Energy Agency
ASBTIA	Australian Southern Bluefin Tuna Industry Association
ASC	Aquaculture Stewardship Council
BAP	Best Aquaculture Practices
CFA	Commonwealth Fisheries Association
CRC	Fisheries Research and Development Corporation
CRCNA	Cooperative Research Centre for Developing Northern Australia
DAWE	Department of Agriculture, Water and the Environment
DAWR	Department of Agriculture and Water Resources
DISER	Department of Industry, Science, Energy and Resources
DITT	Department of Industry, Tourism and Trade
DNRET	Department of Natural Resources and Environment Tasmania

DPIPWE	Department of Primary Industries, Parks, Water and Environment
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FRDC	Fisheries Research and Development Corporation
FSANZ	Food Standards Australia New Zealand
GVP	Gross Value Product
IFAM	International Freight Access Mechanism
ILSC	Indigenous Land and Sea Corporation
IGAB	Intergovernmental Agreement on Biosecurity
IMAS	Institute of Marine and Antarctic Studies
JCU	James Cook University
MOU	memorandum of understanding
MSC	Marine Stewardship Council
NAIF	Northern Australia Infrastructure Facility
NNAC	Narungga National Aboriginal Corporation
NOFF	Neighbours of Fish Farming
NTSC	Northern Territory Seafood Council
OCS	Offshore Constitutional Settlement
R&D	research and development
RAS	Recirculating Aquaculture Systems
RTO	Registered Training Organisations
SIA	Seafood Industry Australia
SMRCA	Sustainable Research Collaboration Agreement
TAMP	Tasmanian Alliance for Marine Protection
TSGA	Tasmanian Salmonid Growers Association
TISC	Tasmania Independent Science Council
UTAS	University of Tasmania
WSSV	White Spot Syndrome Virus

List of Recommendations

Recommendation 1

- 3.111 The Committee recommends that the Department of Agriculture, Water and the Environment work with aquaculture industry representatives to ensure that Australian producers have the assurance that the Department's ongoing reviews of the Import Risk Analysis for imported non-salmonid fish species are appropriately rigorous and up-to-date.

Recommendation 2

- 3.112 The Committee recommends that the Commonwealth Government and the Fisheries Research Development Corporation strengthen their efforts to support Seafood Industry Australia and the aquaculture industry more broadly to improve community awareness of the ecological sustainability and safety of Australian aquaculture produce.

Recommendation 3

- 3.113 The Committee recommends that the Commonwealth Government work with the aquaculture industry, training providers and state and relevant Northern Territory government agencies to develop specialised training pathways and profession development programs to strengthen the aquaculture workforce.

Recommendation 4

- 3.114 The Committee recommends that the Commonwealth Government consider programs and incentives to encourage workers to take up regional aquaculture employment and to support the growth of the industry.

Recommendation 5

- 3.115 The Committee recommends that the Commonwealth Government consider the establishment of an aquaculture industry development fund to provide grants and loans to both established and emerging aquaculture ventures.

Recommendation 6

- 3.116 The Committee recommends that the Commonwealth Government review research and development funding for aquaculture through the Fisheries Research and Development Corporation to ensure that it meets the specific needs of the sector.

Recommendation 7

- 4.63 The Committee recommends that Food Standards Australia New Zealand consider mandating the use of the Australian Fish Names Standard under Food Standards Code Standard 2.2.3 for fish and fish products in Australia.

Recommendation 8

- 4.64 The Committee recommends that the Fisheries Research and Development Corporation work with barramundi industry groups to support an application to assign two standard names for *Lates calcarifer* under the Australian Fish Names Standard: 'barramundi' for fish grown or caught in Australia and 'Asian sea bass' for any imported products.

Recommendation 9

- 4.65 The Committee recommends that the Commonwealth Government, in conjunction with the states and territories, consider changes to the Country of Origin Food Labelling Information Standard 2016 to require labelling of imported seafood products in foodservice settings, such as restaurants, cafes and fish-and-chip shops, in line with current regulatory requirements in the Northern Territory.

Recommendation 10

5.73 The Committee recommends that the Department of Agriculture, Water and the Environment, through the Australian Fisheries Management Forum, support state and Northern Territory government agencies to reduce duplication and streamline regulatory approval processes for aquaculture operations through the introduction of ‘one-stop-shop’ models of regulation management.

Recommendation 11

5.74 The Committee recommends that the Department of Agriculture, Water and the Environment and the Fisheries Research and Development Corporation provide greater assistance to state and Northern Territory governments, in conjunction with industry, to identify and establish further designated aquaculture zones. These zones should be:

- identified using scientific evidence and spatial planning to establish their suitability for aquaculture
- supported by streamlined regulatory approval processes for operators.

Recommendation 12

5.75 The Committee recommends that the Commonwealth Government, in conjunction with state and Northern Territory governments, investigate further opportunities for expanding arrangements under the Offshore Constitutional Settlement to allow for aquaculture activities in Commonwealth waters.

Recommendation 13

5.76 The Committee recommends that the Department of Agriculture, Water and the Environment and the Great Barrier Reef Marine Park Authority work with the Queensland Government to ensure that the current regulatory framework for industry nutrient and sediment emissions in the Great Barrier Reef catchment area reflects latest evidence about the outputs of aquaculture farms and is not unfairly impeding the aquaculture industry’s growth.

Recommendation 14

- 5.77 The Committee recommends that a specialist aquaculture unit is established within the Department of Agriculture, Water and the Environment to support the ongoing implementation of the National Aquaculture Strategy.

Recommendation 15

- 5.78 The Committee recommends that the Department of Agriculture, Water and the Environment conduct a review of the priorities of the National Aquaculture Strategy to provide an update on progress in the five years since its implementation and ensure that its aims are being met.

1. Background

Introduction

- 1.1 Aquaculture – the farming of aquatic organisms such as fish, molluscs, crustaceans, and aquatic plants – is a global industry that has experienced extraordinary growth in Australia in recent years.
- 1.2 Estimated to be worth at least \$1.5 billion, the aquaculture sector in Australia has a reputation for producing high quality, high value and sustainable seafood and other aquatic products for domestic and international markets.
- 1.3 This report aims to examine the vast opportunities for aquaculture in Australia, the barriers faced by industry in expanding their operations, and possible improvements to regulation and policy to support a strong Australian aquaculture sector into the future.

Structure of the report

- 1.4 This report consists of five chapters:
 - This chapter (Chapter 1) provides an overview of the conduct of the inquiry and an outline of the status of the aquaculture in Australia and the Commonwealth, State and Territory regulatory and policy frameworks which underpin the sector.
 - Chapter 2 outlines opportunities for innovation and expansion in aquaculture, examining new and emerging models of production, species, markets, and technological innovations.
 - Chapter 3 addresses the key barriers to growth of the aquaculture industry in Australia, including the risks faced by biosecurity, issues of social license, workforce, and access to investment and research funding.

- Chapter 4 examines the standards for the naming and labelling of farmed seafood in Australia and the impact of these standards on consumers' understanding of the provenance of the products they are purchasing and consuming.
- Chapter 5 considers key issues raised about the regulatory and policy frameworks for aquaculture in Australia and proposes solutions to better support the long-term growth of the sector.

Conduct of the inquiry

- 1.5 On 30 March 2021, the Committee received a referral from the Assistant Minister for Forestry and Fisheries, Senator the Hon Jonathon Duniam, to undertake an inquiry into the Australian aquaculture sector.
- 1.6 On 1 April 2021, the Committee adopted the terms of reference and commenced the inquiry.¹
- 1.7 The Committee called for submissions to be lodged by 14 May 2021 and continued to receive late submissions after this date. A total of 44 submissions were received, listed at Appendix A.
- 1.8 Due to the ongoing impact of the COVID-19 pandemic, the Committee's ability to travel was significantly restricted during the inquiry. The Committee travelled to the Northern Territory on 25 and 26 July 2021, where it conducted site visits at Humpty Doo Barramundi Farm, Paspaley Group, and the Darwin Aquaculture Centre; and a public hearing in Darwin.
- 1.9 The Committee also held a series of public hearings in Canberra, with witnesses appearing from across the country by videoconference. Details of all public hearings held for this inquiry are listed at Appendix B.

¹ The terms of reference of the inquiry can be found in the front matter of this report.

Aquaculture in Australia

- 1.10 World seafood consumption has risen substantially in recent years, but wild-caught production has largely plateaued. Any substantial increase in seafood production will have to be driven by growth in aquaculture. Aquaculture, therefore, forms a critical element of the future of global seafood supply and is the fastest-growing food industry in the world. Estimates put the value of aquaculture at \$US243.5 billion in 2019, with the industry providing 52 per cent of seafood for human consumption.²
- 1.11 Australia's aquaculture industry is small by global standards, accounting for less than 1 per cent world production. But Australia has a reputation for producing safe, sustainable, high-quality and high-value aquaculture products. The Australian aquaculture industry has many advantages over its competitors: the ability to culture a large number of species over a range of climatic zones; access to relatively inexpensive land and water; and freedom from many of the diseases that affect aquaculture in other countries.³
- 1.12 Australian aquaculture sector production in 2019-20 was valued at \$1.6 billion, an increase from \$1.5 billion from the previous year. In volume terms, production reached 106,139 tonnes. By comparison, wild-catch production was valued at \$1.58 billion, a decrease of 12 per cent from the previous year. The higher dollar value of aquacultural output was reflected in the fact that it represented 38 per cent of the total volume of production of fish but 51 per cent of total value, compared to 62 per cent and 49 per cent respectively for wild-catch production.⁴

² Fisheries Research and Development Corporation, *Submission 24*, p. 6.

³ Department of Agriculture, and Water Resources (DAWR), *National Aquaculture Strategy*, Canberra, September 2017, p. 7.

⁴ Department of Agriculture, Water and the Environment (DAWE), *Australian fisheries and aquaculture production*, www.awe.gov.au/abares/research-topics/fisheries/fisheries-and-aquaculture-statistics/production, viewed 11 January 2022.

1.13 The state/territory breakdown of production by value is as follows:

Table 1.1 Aquaculture gross value production by state/territory 2019-20

State/territory	Value of aquaculture production	Main products
Tasmania	\$ 931 million	Salmonids, oysters
South Australia	\$ 229 million	Tunas, abalone, oysters
Queensland	\$ 161 million	Prawns, barramundi
Western Australia	\$ 84.7 million	Pearl oysters
New South Wales	\$ 84.6 million	Prawns, oysters
Victoria	\$ 59.7 million	Abalone, salmonids
Northern Territory	\$ 48.1 million	Barramundi
TOTAL	\$ 1.598 billion	

Source: Department of Agriculture, Water and the Environment, 2022

1.14 In line with the global rise in aquaculture production in the past two decades, Australia's aquaculture sector has steadily increased its real value and proportional share of fisheries and aquaculture production volume and gross value production (GVP). The gross value of aquaculture in Australia has grown from \$605 million in 1998–99, while the value of wild-catch fisheries has remained steady. Production is projected to rise to \$1.9 billion in 2025–26. Aquaculture's share of seafood production has risen from 34 per cent in 2005–06 to 51 per cent in 2019–20. It is forecast to rise to 55 per cent in 2025–26.⁵

1.15 Australian aquaculture production is dominated by Atlantic salmon farming in Tasmania, mainly in coastal waters. According to the Blue Economy Research Centre:

The success of salmon can be attributed to several key factors including how well suited Atlantic salmon are to being farmed, global technology and its exceptional product and culinary characteristics that underpin an expanding domestic market. The establishment and current expansion can be attributable foremost to individuals and industry leadership as well as an environment of

⁵ DAWE, *Submission 25*, p. 5.

supportive State governments and excellent multi-disciplinary research organisations.⁶

- 1.16 Most of the value of Australian aquaculture production comes from high value species such as pearls, salmonids, tuna and oysters, but over forty species are commercially produced. The top five aquaculture species groups, in order of production value, are: salmonids, tuna, edible oysters, pearl oysters and prawns. Other species groups include: abalone, freshwater finfish (such as barramundi, Murray cod, silver perch), brackish water or marine finfish (such as barramundi, snapper, yellowtail kingfish, mulloway, groupers), mussels, ornamental fish, marine sponges, mud crab and sea cucumber.⁷
- 1.17 Lack of success in some areas has reflected a global tendency to focus on new aquaculture species and technology before, rather than after, suitable market research. There is potential for growth in tropical prawns and tropical marine white-fleshed fish. Seaweed aquaculture is an emerging sector with great current interest and potential for Australia, although commercial production has not yet commenced.⁸

Who has responsibility for aquaculture in Australia?

- 1.18 Primary responsibility for the regulation of aquaculture operations lies with state, territory and local governments. Under the Constitution, state and territory governments have primary responsibility for management of land and waters within a state or territory, and management of inland and coastal waters out to the three nautical mile limit. The Commonwealth Government has the responsibility for management of marine waters between the three and two hundred nautical mile limits.
- 1.19 Each state and territory has its own fisheries or aquaculture legislation that regulates aquaculture production, covering issues such as licensing, land use and planning, food safety, water management, environmental protection and management, biosecurity, biodiversity and conservation. Local

⁶ Blue Economy Cooperative Research Centre (Blue Economy CRC), *Submission 9*, p. 3.

⁷ DAWE, *Aquaculture industry in Australia*, Canberra, www.awe.gov.au/agriculture-land/fisheries/aquaculture/aquaculture-industry-in-australia, viewed 11 January 2022.

⁸ Blue Economy CRC, *Submission 9*, pages 3-4.

government by-laws and planning provisions may provide authorities for the development of aquaculture specific to each local government area.⁹

- 1.20 Some states have aquaculture legislation, others regulate aquaculture under broader fisheries legislation. In New South Wales, Victoria, Queensland and Western Australia, aquaculture is regulated under general fisheries legislation covering commercial and recreational fishing, and aquaculture. Tasmania has two pieces of legislation relating to marine and inland fisheries respectively. Separate legislation provides for marine aquaculture leases in Victoria (*Land Act 1958*), Tasmania (*Marine Farming Planning Act 1995*), and potentially in Queensland (*Land Act 1994*). In contrast, South Australia has a single dedicated *Aquaculture Act (2001, as amended in 2003 and 2005)*, while Western Australia has dedicated legislation for pearling (*Pearling Act 1990*).¹⁰
- 1.21 In New South Wales, South Australia, Northern Territory and Tasmania, authority for aquaculture lies with their respective Departments of Primary Industry, with the role played by the Department of Fisheries in Western Australia, Department of Agriculture, Fisheries and Forestry in Queensland, and Victorian Fisheries Authority in Victoria. The Australian Capital Territory does not have an aquaculture industry.
- 1.22 Responsibility for environmental regulation, including the approval of new aquaculture developments and ongoing monitoring and compliance, is generally a matter for state and territory governments. In some cases, the Commonwealth has a regulatory role.¹¹
- 1.23 The Commonwealth Government plays a national role in supporting aquaculture operations through national programs for market access and trade, research, biosecurity, aquatic animal health and export food safety. Environmental management lies under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The responsible Commonwealth department is the Department of Agriculture, Water and the Environment (DAWE).
- 1.24 DAWE administers the *Export Control Act 2020* and is the regulator for compliance with this Act. This Act provides for the control of the export of

⁹ Victorian Fisheries Authority, *Aquaculture Management*, Aquaculture Management - VFA, viewed 11 January 2022.

¹⁰ Food and Agriculture Organization, www.fao.org/fishery/legalframework/nalo_australia/en, viewed 11 January 2022.

¹¹ DAWE, *Submission 25*, p. 11.

fish and fish products and is supported by the Export Control Rules 2021 which set out the operational requirements for exporting fish and fish products from Australia.

- 1.25 As improvements in technology make aquaculture feasible in Commonwealth waters, the Commonwealth Government will also have a role in ‘enabling state and Northern Territory governments to extend their existing aquaculture legislation and management into Commonwealth waters adjacent to their jurisdictions’.¹²

National Aquaculture Strategy

- 1.26 In 2014, the Commonwealth Government and the governments of the states and the Northern Territory issued the National Aquaculture Statement which outlined the governments’ key policy commitments and actions, and articulated a number of government expectations of the industry. The Statement was seen as a step in the development of a national aquaculture strategy.

- 1.27 The governments committed to:

- seek to create an environment that encourages investment, growth and profitability by simplifying processes, supporting research and extension, and improve international market access
- develop a national aquaculture strategy in consultation with stakeholders to identify actions to create an environment in which the industry can grow
- implement and maintain streamlined regulatory and management frameworks
- support and recognise the importance of aquatic animal health and biosecurity for a productive aquaculture industry
- ensure the continued engagement of the Australian industry and wider community in aquaculture planning and management.¹³

- 1.28 Acting on the commitment in the Statement to the development of a National Aquaculture Strategy, DAWE consulted with over 100 stakeholders, including state and Northern Territory governments, indigenous committees, research bodies, environmental non-government organisations and over 60 industry bodies and operators. The stakeholders identified a range of issues affecting the industry, including:

¹² DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 6.

¹³ Department of Agriculture, *National Aquaculture Statement* 2014, p. [3].

- problems with the regulatory framework
- access to agricultural and veterinary chemicals
- need for recognition of the role Aborigines and Torres Strait Islanders
- biosecurity risks
- community understanding of the industry
- infrastructure deficiencies
- domestic and international market access
- extension as part of the research and development framework.¹⁴

1.29 Following the consultative process, the National Aquaculture Strategy was published in 2017.

1.30 According to the then Assistant Minister for Agriculture and Water Resources, Senator Hon Anne Ruston, the Strategy ‘articulates a national vision for unlocking the industry’s potential, identifying priority areas for the industry and Australian governments to address and outlining a range of achievable actions’.¹⁵

1.31 The Strategy defined a national aquaculture target of doubling the current value of Australia’s aquaculture industry to \$2 billion per year by 2027, to be achieved by ‘encouraging development of new industry projects and growth of existing businesses’.¹⁶

1.32 The Strategy identified eight aquaculture development priorities:

- 1 Promoting an efficient regulatory framework modelled on established best practice that is transparent and removes unnecessary burden on business
- 2 Maximising the benefits of innovation in aquaculture through targeted research, development and extension
- 3 Developing and improving market access for Australian aquaculture products domestically and internationally, capitalising on Australia’s clean and green image
- 4 Understanding and managing the biosecurity risks through a coordinated approach to protect the aquaculture industry and the Australian environment
- 5 Improving public perception and understanding of Australian aquaculture as a sustainable industry producing safe and healthy products

¹⁴ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, pages 3-4.

¹⁵ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. iii.

¹⁶ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. vi.

- 6 Continuing to improve the environmental performance of aquaculture, including identifying opportunities for optimising environmental performance through adoption of cost-effective strategies
- 7 Encouraging and promoting investment in Australian aquaculture
- 8 Improving training and education for the aquaculture workforce and ensuring future employment needs of the industry are met.¹⁷

1.33 For each of the eight priorities, the Strategy identified a desired outcome and presented a number of actions required to realise each outcome. The Strategy states that ‘Responsibility for implementing the actions is shared between industry and Australian, state and Northern Territory governments and assumes continuous industry engagement’.¹⁸

1.34 The actions specified the government and industry partners to be involved in each task, and a set of time frames defined as:

- short-term—to be implemented within six months to two years
- medium-term—to be implemented within three to five years
- long-term—to be implemented within five to 10 years.¹⁹

1.35 Some actions were identified as ongoing, meaning they are relevant for the life of the strategy.²⁰

¹⁷ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 4.

¹⁸ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 4.

¹⁹ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 5.

²⁰ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 5.

2. Opportunities for expansion and innovation

- 2.1 Although Australia’s aquaculture sector is modest compared to the global market, there is significant potential for industry growth across the country, bringing with it opportunities for increased domestic and export revenue, employment, and investment in regional communities.
- 2.2 Submitters and witnesses across the aquaculture industry, including operators in the salmon, barramundi, prawn, pearl, abalone, tuna, and seaweed sectors, informed the Committee of their specific goals for achieving growth over the coming years. Although these sectors have varied production requirements and markets, there were some consistent themes on how growth this will be achieved.
- 2.3 Opportunities for growth in the aquaculture sector are likely to come from a wide range of approaches – from expansion of current operations to increasing market share, to innovations and investments in new technologies and new sectors, and the embrace of innovations for environmental sustainability.
- 2.4 This chapter explores some of the key opportunities for growth in the Australian aquaculture sector presented to the Committee during the current inquiry.

Expanding market share for aquaculture products

- 2.5 Evidence to the inquiry shows that there is particular interest in expanding the current production and sale of Australia’s aquaculture products, both for domestic and export markets, to help meet the National Aquaculture Strategy’s target of a sector value of \$2 billion by 2027.

Increasing access to the domestic market

2.6 Australia currently imports approximately 70 per cent of the seafood consumed in the country and, as such, there is significant room for the growth of Australian aquaculture to increase the share of Australian product sold in the domestic market.

2.7 Seafood Industry Australia (SIA) told the Committee that, in the wake of the COVID-19 pandemic, there has been marked spike in the domestic consumption of seafood:

The health benefits of seafood along with the improved access to fresh Australian seafood through supermarket chains and independent retailers have strengthened consumption patterns. The aquaculture sector is well placed to take advantage of the rising levels of demand in Australia.¹

2.8 There is some evidence that Australian consumers are prepared to pay a premium price for Australian seafood.² Tassal Group, a major producer of salmon in Tasmania, submitted that:

Our market research shows Australians want locally grown seafood, and the majority of Australian consumers are willing to pay a premium for the privilege.³

2.9 However, Dr Richard Knuckey from The Company One, a grouper producer in Queensland, told the Committee that ‘it takes time’ for aquaculture producers to establish themselves within domestic live markets – such as the Sydney Fish Market – but that with a continuity of supply, premium prices can be achieved.⁴

2.10 The Sydney Fish Market submitted that it would be seeking to diversify its current seafood trading methods through a new digital platform to better service the needs of the aquaculture industry, which tends to work with fixed prices and accurate production forecasts, and help to provide it a larger market share. Currently less than seven per cent of the Sydney Fish Market’s suppliers are from the aquaculture sector, and it is anticipated that

¹ Seafood Industry Australia (SIA), *Submission 22*, p. 9.

² Mainstream Aquaculture, *Submission 3*, p. 2; Australian Barramundi Farmers Association (ABFA), *Submission 10*, p. 6.

³ Tassal Group, *Submission 44*, p. [2].

⁴ Dr Richard Knuckey, Managing Director, The Company One Pty Ltd, *Committee Hansard*, Canberra, 8 November 2021, pages 13 and 14.

this change in the trading system will provide a significant opportunity to provide farmed seafood to the domestic market.⁵

- 2.11 Several stakeholders noted that, to support a strong domestic farmed seafood market, more work would be needed around country of origin labelling in food service settings to ensure customers are aware of where their seafood is coming from and to support their purchasing decisions. This issue is discussed in more detail in Chapter 4.

Developing export markets

- 2.12 Profitable export markets are another key to the success of Australia's aquaculture industry. With wild stocks diminishing, Australia's strong aquaculture sector will be well placed to provide for the demand for seafood and other aquaculture products, particularly in Asia.
- 2.13 The Northern Territory Department of Industry, Tourism and Trade noted that the price of fish in Asian markets is rising which has created an opportunity for Australian aquaculture – in the past, exporting finfish was not worth the associated costs, but now that finfish returns are higher it is beginning to make sense to export to Asia.⁶
- 2.14 The Australian Southern Bluefin Tuna Industry Association made the point that Australia's close proximity to expanding Asian markets also gives a competitive freight advantage to Australian aquaculture producers.⁷ However, the Australian tuna industry has recently seen a weakened market. There has been a decline in tuna aquaculture production due to both export price falls and a weaker yen.⁸ Australia's tuna aquaculture is Japanese yen dependent and, as a consequence, profits have fallen from \$291 million in 2002 to \$91 million in 2021.⁹

⁵ Sydney Fish Market, *Submission 7*, pages 2 and 3.

⁶ Mr Ian Curnow, Executive Director, Fisheries Division, Department of Industry, Tourism and Trade, *Committee Hansard*, Darwin, 26 July 2021, p. 16.

⁷ Australian Southern Bluefin Tuna Industry Association (ASBTIA), *Submission 14*, p. 1.

⁸ ASBTIA, *Submission 14*, p. 2.

⁹ ASBTIA, *Submission 14*, p. 3, and Mr Brian Jeffriess, Chief Executive Officer, Australian Southern Bluefin Tuna Industry Association Ltd, *Committee Hansard*, Canberra, 26 November 2021, p. 11.

- 2.15 The Aquaculture Council of Western Australia likewise warned against over-reliance on a single export market, submitting that the industry must diversify its export markets to ensure success.¹⁰
- 2.16 Tassal Group, a major salmon operator in Tasmania, mentioned that the COVID-19 pandemic had 'demonstrated the need for Australian businesses to diversify their exports markets'¹¹. In 2020, the company's export costs increased by 120 per cent due to travel bans and the reduction of airfreight capabilities. The Commonwealth Government's International Freight Access Mechanism (IFAM) proved to be a 'lifeline' for many aquaculture businesses because it facilitated entry into international markets.¹² To avoid a repeat of the current situation Tassal submitted that:

...the aquaculture industry needs assistance to diversify its export portfolios to minimise risk and ensure commercial viability. We would encourage the Commonwealth Government to continue to work to establish free trade agreements and seafood accords with export partners that would provide demonstrable benefits to the aquaculture industry. Opening up new markets for the aquaculture sector would build confidence for companies to invest and employ more people, providing regional wealth and stronger communities.¹³

- 2.17 The Committee heard that the high quality of other Australian aquaculture products, not just seafood, contributes to their export value. Dr Richard Knuckey told the Committee that The Company One is exporting grouper fingerlings to South East Asia, a market that had for decades been dominated by Taiwan. He commented that:

To be able to sell fingerlings into this market is an indication of the quality of our product. It's recognised there that we're a supplier of the highest quality grouper fingerlings.¹⁴

- 2.18 The Australian Institute of Marine Science (AIMS) likewise submitted that there is also a significant opportunity for coral aquaculture in export markets:

With reefs around the world experiencing an overall trend towards declining coral cover, AIMS forecasts there will be strong demand in the years to come

¹⁰ Aquaculture Council of Western Australia (ACWA), *Submission 2*, p. 2.

¹¹ Tassal Group, *Submission 44*, p. 5.

¹² Tassal Group, *Submission 44*, p. 5

¹³ Tassal Group, *Submission 44*, p. 5

¹⁴ Dr Knuckey, The Company One Pty Ltd, *Committee Hansard*, Canberra, 8 November 2021, p. 13.

for the rollout of reef restoration and adaptation measures, such as coral seeding via coral mariculture, particularly in the Indo-Pacific. Australia and Australian businesses would therefore be uniquely placed to capitalise on our technological capabilities and expertise in coral mariculture by propagating the corals in Northern Australia waters, before exporting them for seeding on degraded / damaged tropical reefs around the world.¹⁵

- 2.19 Submitters noted that, for the ongoing success of Australian aquaculture in export markets, strategic planning within individual sectors is vital. The Australian Barramundi Farmers' Association acknowledged the great potential for marketing Australian Barramundi in the Asia Pacific Region, but outlined that:

The industry will need a strategic, evidence-based brand and export strategy underpinned by a combination of desk and in-country research in both premium retail and food service channels. One of the vitally important platforms of the export strategy needs to be to build export capability and readiness within industry.¹⁶

- 2.20 SIA also told the Committee that it is currently coordinating the development of an Australian seafood industry export market strategic plan, in response to the challenges faced due to COVID-19 and other market interruptions.¹⁷
- 2.21 The National Aquaculture Strategy includes an action for the Commonwealth Government, in conjunction with industry, to increase the awareness and uptake of trade promotion and cooperation initiatives to help develop new trading relationships, such as Austrade's Export Market Development Grants scheme and TradeStart program, and the Australia-China Agricultural Cooperation Agreement program.¹⁸

¹⁵ Australian Institute of Marine Science (AIMS), *Submission 15*, p. 5.

¹⁶ ABFA, *Submission 10*, p. 5.

¹⁷ Ms Papacosta, Chief Executive Officer, Seafood Industry Australia, *Committee Hansard*, Canberra, 26 August 2021, p. 1.

¹⁸ Department of Agriculture and Water Resources (DAWR), *National Aquaculture Strategy*, Canberra, September 2017, p. 15.

Opportunities for production growth

2.22 Australia has significant natural resources, including land and sea, that are suitable for use by the aquaculture industry. Leveraging these resources will provide opportunities for new industries and for the expansion of existing operations.

Offshore expansion

2.23 Offshore aquaculture is an area of significant development around the world, with many countries exploring offshore, deep-water technologies to grow their industries beyond coastal areas and increase production capacities.¹⁹ In Norway, for example, moving salmon production offshore is targeted to more than triple the level of production for the industry in that country.²⁰

2.24 Expansion into offshore aquaculture – that is, aquaculture operations more than three nautical miles from the coast – presents significant opportunities for Australian aquaculture, particularly in the areas of finfish, oyster and seaweed farming.²¹ Research is needed to quantify the potential value of these opportunities.

2.25 But there are also significant challenges to operating in an exposed and remote environment. Offshore production requires more robust infrastructure than coastal production, and different approaches to maintenance, energy supply, feeding, animal husbandry, supply chain logistics and biosecurity.²²

2.26 With these challenges also come opportunities for innovation. For example, more autonomous operations and technology may result from solutions to

¹⁹ Ms Emma Campbell, First Assistant Secretary, Agvet Chemicals, Fisheries, Forestry and Engagement Division, Department of Agriculture, Water and the Environment (DAWE), *Committee Hansard*, Canberra, 3 June 2021, p. 2.

²⁰ CSIRO, *Submission 20*, pages 2-3; Mr Wayne Hutchinson, Research Portfolio Manager, Fisheries Research and Development Corporation (FRDC), *Committee Hansard*, Canberra, 24 June 2021, p. 2.

²¹ Blue Economy Corporative Research Centre (Blue Economy CRC), *Submission 9*, p. 4; Tasmanian Salmonid Growers Association (TSGA), *Submission 37*, p. 2; Dr Patrick Hone, Managing Director, FRDC, *Committee Hansard*, Canberra, 24 June 2021, pages 5-6.

²² Dr John Whittington, Chief Executive Officer, Blue Economy CRC, *Committee Hansard*, Canberra, 21 October 2021, p. 3; Blue Economy CRC, *Submission 9*, pages 4-5; NWTAS for Clean Oceans, *Submission 21*, p. 13.

logistical challenges, such as distance to shore, travel times and the costs of transporting food and product. Similarly, the co-location of seafood production and renewable energy production systems in a single offshore site, which is an emerging trend overseas, could serve to both streamline development and operating costs and provide an environmentally sustainable energy source for the aquaculture operation.²³

- 2.27 Regulatory frameworks in Australia do not currently allow for aquaculture activities in the Commonwealth waters where offshore activities would occur, but first steps have been taken to address this regulatory gap. This issue is explored further in Chapter 5.
- 2.28 Research is current underway in Tasmania, through the Blue Economy Corporative Research Centre (Blue Economy CRC) to understand how these challenges can be met and innovations leveraged to develop an offshore aquaculture industry in Australia.

Blue Economy CRC's offshore aquaculture program

- 2.29 Established in 2019 under the Australian Government cooperative research centres program with a budget of \$320 million over ten years, the Blue Economy CRC brings together 40 industry, government, and research partners from ten countries with expertise in aquaculture, marine renewable energy, and maritime engineering. It conducts research, development and extension activities designed to grow 'Blue Economy' industries: seafood and marine production, offshore engineering and renewable energy.²⁴
- 2.30 Several witnesses and submitters noted the important work being undertaken by Blue Economy CRC to examine the needs of offshore aquaculture – from the physical requirements of production in an exposed environment to the regulatory framework required to conduct operations – in order to support the expansion of the industry into this space.²⁵
- 2.31 The CRC has five specialised research programs:
- Offshore Engineering and Technology - to generate the infrastructure that supports the development of offshore systems

²³ Blue Economy CRC, *Submission 9*, p. 5; Dr Whittington, Blue Economy CRC, *Committee Hansard*, Canberra, 21 October 2021, pages 3-4.

²⁴ Dr Whittington, Blue Economy CRC, *Committee Hansard*, Canberra, 21 October 2021, p. 1.

²⁵ See, for example, Ms Campbell, DAWE, *Committee Hansard*, Canberra, 3 June 2021, p. 5 ; Dr Karen Wild-Allen, Principal Research Scientist, CSIRO Oceans and Atmosphere, *Committee Hansard*, Canberra, 17 June 2021, p. 3.

- Seafood and Marine Products - to develop offshore aquaculture systems that provide viable and sustainable growth opportunities for this sector
- Offshore Renewable Energy Systems - to advance the technological and commercial readiness of emerging offshore renewable energy system technologies
- Environment and Ecosystems - to understand the environmental footprint of the infrastructure, culture systems, and energy generating devices
- Sustainable Offshore Developments - to profile and advocate for the regulatory frameworks that will provide confidence for aquaculture and renewable energy industry to invest and for the public to be confident that offshore developments operate to the highest environmental standards for sustainability and ecosystem integrity.²⁶

2.32 Dr Whittington from Blue Economy CRC told the Committee that Australia could start an offshore aquaculture industry ‘within a couple of years’ once a regulatory framework has been established, physical conditions are tested and suitable technology has been identified.²⁷

A developing seaweed industry

- 2.33 Australia’s current seaweed industry is small, with an approximate production value of \$3 million production value, compared to the industry’s global value of \$11 billion and growing.²⁸
- 2.34 The Australian Sustainable Seaweed Alliance (ASSA) informed the committee that there is significant potential for the growth of the industry in Australia, with a strategic plan in place to achieve a \$100 million seaweed industry by 2025 and a \$1.5 billion industry by 2040, employing up to 9,000 people.²⁹
- 2.35 ASSA noted that seaweed production, unlike some other aquaculture, does not require intensive inputs and does not produce environmentally harmful

²⁶ Tasmanian Government, Department of Primary Industries, Parks, Water and Environment (DPIPWE), *Submission 18*, p. 19.

²⁷ Dr Whittington, Blue Economy CRC, *Committee Hansard*, Canberra, 21 October 2021, pp. 2-3.

²⁸ Blue Economy CRC, *Submission 9*, p. 10; Jo Kelly, Chair, Australian Sustainable Seaweed Alliance (ASSA), *Committee Hansard*, Canberra, 8 November 2021, p. 6.

²⁹ Australian Sustainable Seaweed Alliance (ASSA), *Submission 26*, p. 1. See also, Dr Whittington, Blue Economy CRC, *Committee Hansard*, Canberra, 21 October 2021, pages 7-8; University of Tasmania and Institute of Marine and Antarctic Studies, *Submission 13*, p. 2; SIA, *Submission 22*, p. 6.

waste.³⁰ In addition to its potential as a food product, seaweed can be used in fertiliser and soil additives, and research is underway into its potential use in bioplastics, construction materials, complementary medicines and carbon capture.³¹ Seaweed also has great potential for use in restorative aquaculture programs, discussed later in this chapter.

- 2.36 A recent discovery found that a particular Australian seaweed (*Asparagopsis taxiformis*), when added to livestock feed, can reduce methane emissions from livestock by over 90 percent. This presents an opportunity to tackle climate change and to support the Australian cattle and sheep industry. As a result of this discovery, there is now a global race to commercially cultivate the seaweed at scale, and the Australian seaweed industry has an opportunity to lead the way.³²
- 2.37 Australia currently has no commercial-scale seaweed farms, so substantial work is needed to kickstart the industry, particularly the introduction of policy and regulation to allow for ocean cultivation of native seaweeds in offshore zones, the creation of dedicated research and development plans, and investment in emerging discoveries such as the one mentioned above.³³
- 2.38 The FDRC told the committee that work is underway to coordinate funding for seaweed farming. There are a lot of opportunities for seaweed across northern and southern Australia, with investors approaching different groups. FRDC is looking to coordinate this investment in agencies such as Marine Bioproducts CRC, Blue Economy CRC, the Australian Centre for International Agriculture Research ACIAR and AgriFutures. The aim is to avoid duplication and to encourage a collaborative approach and accelerate the exploitation of opportunities in the emerging seaweed growing industry.³⁴

³⁰ Jo Kelly, ASSA, *Committee Hansard*, Canberra, 8 November 2021, p. 6.

³¹ Jo Kelly, ASSA, *Committee Hansard*, Canberra, 8 November 2021, p. 6.

³² Jo Kelly, ASSA, *Committee Hansard*, Canberra, 8 November 2021, p. 6.

³³ Blue Economy CRC, *Submission 9*, p. 10; Jo Kelly, ASSA, *Committee Hansard*, Canberra, 8 November 2021, p. 6.

³⁴ Mr Hutchinson, FRDC, *Committee Hansard*, Canberra, 2 December 2021, p. 5.

Expanding aquaculture in northern Australia

- 2.39 Several submitters to the inquiry reported the potential for growth of aquaculture in northern Australia, particularly in pond-based aquaculture systems.³⁵ Current estimates show that over 13 million hectares of land in northern Australia are suitable for freshwater aquaculture and around 1.2 million hectares are suitable for marine aquaculture, in addition to opportunities for production in marine waters along the coastline.³⁶
- 2.40 The potential for aquaculture growth in northern Australia has been examined in detail by the Joint Select Committee on Northern Australia in 2016,³⁷ and has been the subject of significant research and development through the work of the Corporative Research Centre for Northern Australia (CRCNA) since its establishment in 2017.
- 2.41 As of 2017, the annual gross value of aquaculture production from northern Australia was worth approximately \$233 million of the \$1.35 billion national industry, with most of this value coming from barramundi (33%), prawns (32%) and pearls (31%).³⁸ A situational analysis conducted by CRCNA, published in early 2020, found that the industry has potential to grow by five times its current production value by 2030, achieving a gross value of production greater than \$1.3 billion, and leading to the addition of around 1,400 to 2,300 jobs for the regions.³⁹
- 2.42 CSIRO submitted that tropical Australia has perfect climatic conditions and water quality parameters, and importantly an abundance of the two key requirements for aquaculture, clean sea water and coastal land. Additionally, the use of seawater with only small freshwater requirements for many aquaculture enterprises means that these activities can be effectively drought proof. CSIRO noted that:

³⁵ Ridley Corporation Limited, *Submission 5*, p. 4; Northern Territory Seafood Council (NTSC), *Submission 12*, p. 2; CSIRO, *Submission 20*, p. 4.

³⁶ Cooperative Research Centre For Developing Northern Australia (CRCNA) *Northern Australia aquaculture situational analysis 2020*, pages 10 and 23.

³⁷ Joint Select Committee on Northern Australia, *Scaling Up: Inquiry into Opportunities for Expanding Aquaculture in Northern Australia*, Canberra, February 2016.

³⁸ CRCNA, *Northern Australia aquaculture situational analysis 2020*, pages 10 and 73.

³⁹ NTSC, *Submission 12*, p. 2; see also CRCNA, *Northern Australia aquaculture situational analysis 2020*, pages 10 and 73.

This sort of development would not only suit larger commercial operators but would provide an opportunity for smaller scale aquaculture development, in conjunction with traditional owners.⁴⁰

Aquaculture projects in northern Australia

- 2.43 The Committee received evidence about a range of both large-and small-scale aquaculture projects and opportunities currently being leveraged across northern Australia.
- 2.44 During its travel to the Northern Territory, the Committee had the opportunity to visit the Darwin Aquaculture Centre, a facility owned by the Northern Territory Government which conducts research, development and extension activities to support the growth of the industry. This Centre provides a space for private sector to conduct research and hatchery production in collaboration with industry, as well as projects and partnerships with Indigenous communities. Its work has enabled the development of best practice techniques to support a range of sectors such as barramundi, mud crab, sea cucumber and native tropical blacklip rock oysters.⁴¹
- 2.45 The Committee also visited the Humpty Doo Barramundi farm, which recently received Northern Australia Infrastructure Facility loans to enable farm improvements, including increased infrastructure and farm capacity, which will expand the production capacity of the farm and create jobs in construction and operations.⁴²
- 2.46 One of the more significant new aquaculture developments in northern Australia is Project Sea Dragon, led by Seafarms Group. This is a large-scale land-based prawn aquaculture project designed to develop around 10,000 hectares of prawn ponds and produce high-quality black tiger prawns at a volume of up to 130,000–180,000 tonnes per annum.⁴³

⁴⁰ CSIRO, *Submission 20*, p. 4.

⁴¹ Northern Territory Government, *Submission 34*, p. 3; NTSC, *Submission 12*; Department of Industry, Tourism and Trade, *Aquaculture research and development*, Northern Territory Government, <https://industry.nt.gov.au/projects-and-initiatives/fisheries/aquaculture-research-and-development>, viewed 16 December 2021.

⁴² Mr Daniel Richards, Chief Executive Officer, Humpty Doo Barramundi, *Committee Hansard*, Darwin, 26 July 2021, pages 4 and 5; <https://naif.gov.au/what-we-do/case-studies/humpty-doo-barramundi-farm-hdb-investment-decision/>; Northern Territory Government, *Submission 34*, p. 3

⁴³ ICNgateway, *Project Sea Dragon*, <https://gateway.icn.org.au/project/3770/project-sea-dragon>, viewed 9 December 2021.

2.47 Project Sea Dragon is a fully integrated project, aiming to build five facilities across the Northern Territory and Western Australia to manage each step of the prawn production process from breeding, hatching and rearing, to growing, harvesting and processing of prawns. It is currently in early stages of development, with the construction of the first stage of the project recently commencing. The project is anticipated to generate hundreds of jobs throughout the seven-year construction process, with a total of 2,800 jobs, including 1,500 direct operations jobs, expected by completion. This does not include indirect jobs created through the services which will be required by the project.⁴⁴

Aboriginal and Torres Strait Islander enterprises

2.48 Industry groups told the Committee that the role of Aboriginal and Torres Strait Islander peoples in the aquaculture sector, particularly in northern Australia, is an area for growth that should be fostered by the sector.⁴⁵

2.49 There are already some Aboriginal and Torres Strait Islander peoples involved in the management and development of aquaculture enterprises across Australia. Many of these are in remote coastal communities and represent significant economic opportunities, providing a source of employment and entrepreneurial activity to the local community.

2.50 For example, in the Northern Territory, Tasmania Seafood Pty Ltd is working in cooperation with Aboriginal communities to develop hatchery production and ranching of sea cucumbers. The holothurian species, farmed by Tasmanian Seafoods, is a highly lucrative niche product popular in Asian markets and represents the revitalisation of a longstanding fishery in northern Australia.⁴⁶

2.51 In South Australia, the Narungga National Aboriginal Corporation (NNAC) has been granted a seaweed farming licence. The NNAC is working in partnership with CH4 Global to commercialise cultured seaweeds.⁴⁷

⁴⁴ Dr Chris Mitchell, Executive Director, Seafarms Group Ltd, *Committee Hansard*, Canberra, 12 August 2021, pages 6-7.

⁴⁵ See, AIMS, *Submission 15*, p. 3; Dr Mitchell, Seafarms Group Ltd, *Committee Hansard*, Canberra, 12 August 2021, p. 9; Dr Robert Richards, Managing Director and Board Chairperson, Humpty Doo Barramundi, *Committee Hansard*, Darwin, 26 July 2021, p. 8; Ridley Corporation Limited, *Submission 5*, p. 4; Fisheries Research and Development Corporation (FRDC), *Submission 24*, p. 3.

⁴⁶ FRDC, *Submission 24*, p. 15.

⁴⁷ FRDC, *Submission 24*, p.15.

- 2.52 In Western Australia, the Murujuga Aboriginal Corporation has partnered with the Pilbara Development Commission, Maxima Pearling Company, and the City of Karratha to investigate the feasibility of farming tropical blacklip rock oysters. And the Emama Nguda Aboriginal Corporation in Derby is commercialising the breeding of giant freshwater prawns known as cherabin.⁴⁸
- 2.53 Humpty Doo Barramundi expressed the view that while there are many opportunities for aquaculture ventures in Aboriginal communities, careful attention needs to be paid to economies of scale and the use of viable species. Mr Daniel Richards, Chief Executive Officer, stressed that he had:
- ...observed a lot of failed ventures around barramundi and species that are highly management intensive, we don't feel that opportunities like that are appropriate in remote locations with an inexperienced workforce.⁴⁹
- 2.54 Several other submitters also noted that greater funding, investment and training are needed to support an increased role for Aboriginal and Torres Strait Islander peoples in the aquaculture industry.
- 2.55 FRDC noted that the Indigenous Land and Sea Corporation (ILSC) had increasingly sought to support economic participation in aquaculture opportunities.⁵⁰ However, both ACWA and Maxima Pearling Company contended that the ILSC had 'very limited funds to assist Aboriginal investment in aquaculture projects'. They argued that 'greater investment in ILSC programs to support aquaculture investment would make a significant difference to Aboriginal participation and benefit the aquaculture industry as a result'.⁵¹
- 2.56 Dr Heaton, likewise, urged the allocation of 'additional and ongoing funding to build capacity and resourcing to enable local Aboriginal and Torres Strait Islander peoples and organisations, including Traditional Owner groups, to fully participate in the aquaculture sector, to fulfil their spiritual, cultural, environmental and economic needs'.⁵²

⁴⁸ FRDC, *Submission 24*, p. 15.

⁴⁹ Mr Richards, Humpty Doo Barramundi, *Committee Hansard*, Darwin, 26 July 2021, p. 7.

⁵⁰ FRDC, *Submission 24*, p. 15.

⁵¹ ACWA, *Submission 2*, p. 3; Maxima Pearling Company, *Submission 4*, p. 3.

⁵² Dr Adam Heaton, *Submission 36*, p. 4.

Innovations for environmental sustainability

2.57 Innovations are an important driver of the growth of aquaculture, particularly those that increase profitability while also addressing environmental sustainability. As noted above, offshore aquaculture and seaweed already offer such opportunities.

Growing the 'circular' economy

2.58 The Australian aquaculture sector has an opportunity to achieve growth and greater sustainability through investment in regenerative, 'circular economy' projects which minimise waste from aquaculture systems and create environmental benefits in addition to profits.⁵³

2.59 The FRDC submitted that the Australian aquaculture sector can improve its sustainability through a circular economy with three central principles: restoring natural systems by protecting and actively improving the environment; minimising waste and pollution by designing products and services in a new way; and keeping products and materials in use for as long as possible. It explained that:

These principles will require innovation to provide solutions that can be adopted within commercial aquaculture operations to meet greater sustainability ambitions. They can be achieved through innovations that increase production, the use of novel ingredients and by-products for feed, optimised resource use through new technology and big data, and increased collection and recycling of nutrients.⁵⁴

2.60 In Tasmania, salmon producers are exploring innovative ways to use the by-products of their farms, such as using fish waste as a fertilizer and salmon processing by-products for pet food, to contribute to this circular economy.⁵⁵ For example, Huon Aquaculture has been collaborating with Tasmanian farmers to trial the use of salmon waste as fertilizer. Farmers have reported that adding salmon waste to compost has resulted in

⁵³ FRDC, *Submission 24*, p. 10.

⁵⁴ FRDC, *Submission 24*, p. 18.

⁵⁵ Ms Pene (Penelope) Snashall, Communications Manager, Huon Aquaculture, *Committee Hansard*, Canberra, 26 November 2021, p. 10; Snashall 26 Nov p 10; TSGA, *Submission 37*, p.2.

exponential improvement in biological diversity and soil quality for their farms.⁵⁶

Restorative aquaculture

- 2.61 Restorative aquaculture is aquaculture that provides direct benefits to the environment and positive environmental outcomes. The National Aquaculture Strategy noted that restorative aquaculture is of interest to both the aquaculture industry and environment groups.⁵⁷
- 2.62 The Nature Conservancy Australia expressed its interest in restorative aquaculture and that other aquaculture operators had also shown interest. The organisation mentioned that all forms of aquaculture can potentially pursue restorative aquaculture, but that Australia's bivalve shellfish and seaweed systems have the greatest potential. The Nature Conservancy Australia considers that supporting industry to engage in restorative aquaculture more extensively is the next step in the sustainable development of the sector.⁵⁸
- 2.63 The Australian Institute of Marine Science (AIMS) discussed the potential for the mariculture sector to support Australia's efforts in research and development of solutions for the health of coral reefs. AIMS is the managing entity for the Reef Restoration and Adaption Program under the Commonwealth Governments Reef Trust Partnership which seeks to protect the Great Barrier Reef.⁵⁹
- 2.64 AIMS is leading the research and development program into coral mariculture, which is working on the capability to propagate up to 1 million corals per year to be placed on the reef. AIMS is seeking, through a range of propagation methods and automation, to facilitate seeding of corals onto reefs.⁶⁰ Such efforts will be critical for the restoration of the Great Barrier Reef after mass bleaching events.

⁵⁶ Huon Aquaculture and Cherries Tasmania Orchards, 'Turning Salmon into Cherries', *Media Release*, 24 September 2020; T Briscoe, 'Fish poo project going swimmingly on this Tasmanian farm as soil reaps benefits', *Australian Broadcasting Corporation*, 25 November 2021.

⁵⁷ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 6.

⁵⁸ The Nature Conservancy Australia, *Submission 40*, pages 2 and 3.

⁵⁹ AIMS, *Submission 15*, p. 4.

⁶⁰ AIMS, *Submission 15*, p. 4.

- 2.65 With reefs around the world experiencing declines, AIMS forecasts there will be strong demand for reef restoration and adaptation methods, such as coral seeding through coral mariculture. AIMS considers that Australia and Australian businesses would be well-placed to capitalise on their technological capabilities and expertise in coral mariculture and export propagated corals to help repair degraded reefs around the world.⁶¹
- 2.66 Dr Brinkman from AIMS described innovative ways in which aquaculture can be employed in blue carbon strategies. He told the Committee that just as land agricultural management can ‘retain carbon, improve soil quality and, in concert, improve yields’ so aquaculture can work in parallel. For example:
- In the rehabilitation of seagrass or the growing of seagrass and other coastal vegetation, in addition to having the potential to take nutrient loads out of the water column, they're actually a very good carbon sink. They're a component that can be addressed in terms of blue carbon.⁶²

Recirculating aquaculture systems

- 2.67 One of the more commonly discussed innovations for environmental sustainability throughout this inquiry was the use of recirculating aquaculture systems (RAS) for aquaculture.
- 2.68 RAS are self-contained, tank-based systems in which fish are grown under controlled environmental conditions in water recycled through biological and mechanical filters, with minimal waste exchanged back into the environment and a low volume of water required per unit of production. They are most used in freshwater environments but can also be used in marine environments. RAS are considered a more intensive approach to aquaculture, using higher densities of fish with more rigorous management, and are useful in circumstances where land and water are limited, or environmental conditions are not suited to the species being farmed.⁶³

⁶¹ AIMS, *Submission 15*, p. 4.

⁶² Dr Richard Brinkman, Research Program Director, Sustainable Coastal Ecosystems and Industries, Australian Institute of Marine Science, *Committee Hansard*, 27 May 2021, p. 4.

⁶³ Victorian Fisheries Authority, *Best Practice Environmental Management Guidelines for Recirculating Aquaculture Systems, Fisheries Management Report No. 37*, April 2008; Queensland Government Business Queensland, September 2016, <https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/aquaculture/site-selection-production/production-systems/recirculating-systems>, viewed 9 December 2021.

- 2.69 RAS, as a technology which does not emit waste into the surrounding environment, may have a particular use in jurisdictions such as Queensland which have strict wastewater emissions standards for land-based aquaculture.⁶⁴
- 2.70 Several submitters also outlined possibilities for the greater use of RAS in land-based salmon operations. Currently, major Tasmanian salmon growers use a hybrid system where salmon are grown to a larger size in in land-based hatchery systems before they are transferred to marine cages for growth to market size. While the original salmon hatcheries built in Tasmania during the 1970s used flow-through technology in earthen ponds, many of these systems have since been replaced with RAS technology.⁶⁵
- 2.71 The Tasmanian Salmonid Growers Association (TSGA) informed the committee that this hybrid system allows the salmon growers to farm fish sustainably, as well as employing more local people than they would otherwise through a marine-based system.⁶⁶
- 2.72 Some environmental groups and academics submitted that RAS operations have significant advantages over traditional aquaculture in salmon farming – such as improved monitoring and management, reduced environmental stress, and reduced waste – and should be considered for use across the entire egg-to-market growth cycle as an alternative to marine cage farming.⁶⁷
- 2.73 However, evidence from operators suggests that the use of RAS alone in Tasmania will not be a practical pursuit for the salmon industry. For example, the estimated power requirements to completely farm fish on land in Tasmania at the current production levels would consume more power than is currently generated in the state. Additionally, any saltwater waste from land-based operations cannot be disposed of on land or recycled for compost or fertiliser due to its very high salt content, which poses a different, but significant, environmental risk compared to marine systems.⁶⁸

⁶⁴ Dr Knuckey, The Company One Pty Ltd, *Committee Hansard*, Canberra, 8 November 2021, p. 14.

⁶⁵ Tasmanian Government DPIPWE, *Submission 18*, p. 3.

⁶⁶ TSGA, *Submission 37*, p. 3.

⁶⁷ Tasmanian Alliance for Marine Protection and Neighbours of Fish Farming, *Submission 19*, pages 12-14; NWTAS for Clean Oceans, *Submission 21*, p. 3; Dr Lisa-Ann Gershwin and Dr Dain Bolwell, *Submission 28*, p. 5.

⁶⁸ TSGA, *Submission 37*, p. 3; Huon Aquaculture Group Limited, *Submission 31*, p. 2; Petuna Aquaculture, *Submission 33*, p. 2.

2.74 Blue Economy CRC submitted that, in the Australian context, the ocean will likely remain the most suitable place to grow salmon from smolts to market size and that, although innovations in RAS will improve the sustainability of land-based aquaculture operations:

... they will inevitably remain high resource input, high-cost production systems that will require efficient market access to make them relatively financially viable.⁶⁹

Committee comment

2.75 It is evident that there is a significant potential for the growth of the aquaculture industry within Australia, and that the industry has a bright future ahead. While there are some matters, such as regulatory issues, needed to unlock the industry, the Committee believes the industry is well positioned to capitalise on the growth potential.

2.76 The Committee recognised that expanding market share, domestically and internationally, will be key to the industry's growth. In relation to the domestic market, the Committee considers it unacceptable that Australia imports such extensive quantities of seafood despite the presence of our own industry that supplies superior products. But it is heartened by evidence that suggested that Australia's are prepared to pay a premium for domestic product. The Committee also believes in the potential for the growth of Australia's seafood exports, particularly in Asian markets which have demonstrated an interest in Australia's premium seafood products.

2.77 The Committee took great interest in the opportunities in offshore aquaculture. With the necessary regulations in place and appropriate technology developed, offshore aquaculture shows the potential to enable substantially increased production.

2.78 Innovations in aquaculture were also of interest to the Committee, such as recirculating aquaculture systems (RAS) and pond aquaculture. The Committee noted that low technology aquaculture like pond aquaculture presents opportunities for remote communities. Restorative aquaculture is a key initiative of the aquaculture industry, including projects such as the AIMS initiative to help restore and maintain coral reefs.

2.79 The Committee particularly wishes to note the importance of the inclusion of Aboriginal and Torres Strait Islander peoples in aquaculture. The Committee

⁶⁹ Blue Economy CRC, *Submission 9*, p. 4.

was pleased to hear that key industry bodies had a similar way of thinking and that collaborations between industry bodies and Aboriginal and Torres Strait Islander peoples are already occurring. There is room for significant growth in aquaculture as an emerging economic opportunity for Aboriginal and Torres Strait Islander peoples.

- 2.80 The growth of the Australian aquaculture industry is important to the Committee, which is keen to observe the economic opportunities that would result. But opportunities are not without barriers as the potential of Australian aquaculture is constrained by key issues that were discussed throughout the inquiry. Chapter 3 will examine these issues and how they should be addressed to ensure that the Australia aquaculture industry can grow unimpeded.

3. Addressing barriers to growth

3.1 There is a range of matters that present actual and potential barriers to the growth of the Australian aquaculture industry. This chapter discusses the key issues which might impede the expansion of the industry, including biosecurity, environmental concerns, workforce issues and access to investment and development funding. The chapter outlines stakeholder concerns in relation to those matters and considers proposals for industry and government responses, including the role of the Commonwealth Government in supporting new and emerging aquaculture ventures.

Biosecurity

3.2 Australia’s biosecurity controls play a key role in ensuring that the country remains one of the few in the world free from the most serious pests and diseases, including in the aquatic environment.¹ Maintaining this status is paramount to the Australian aquaculture industry as it is a key part of the industry’s status as a producer of premium product.

3.3 Seafood Industry Australia observed that:

For the aquaculture industry to reach its full growth potential, it is essential that optimal health of farmed stock is maintained, and significant disease impacts are minimised.²

3.4 Producers expressed the view that the growth of Australian aquaculture depended on maintenance of the ‘competitive advantage of being free from

¹ Department of Agriculture, Water and the Environment (DAWE), *Submission 25*, p. 9.

² Seafood Industry Australia (SIA), *Submission 22*, p. 11.

many important diseases'.³ The Australian Prawn Farmers Association (APFA) submitted that 'biosecurity is a significant barrier to growth' because an outbreak of disease such as the White Spot disease that damaged the Queensland prawn industry in 2016 and 2020 would be a major set-back.⁴

- 3.5 AQUAPLAN, managed by the Department of Agriculture, Water and the Environment (DAWE), is a comprehensive national strategic plan for aquatic animal health. A review of the 2014-19 plan commenced in early 2020. A new plan, expected to be release in late 2021, had not been released by 31 January 2022.⁵
- 3.6 The National Aquaculture Strategy identified biosecurity as one of the eight priorities for the industry, emphasising the need for a 'robust risk-based approach to managing biosecurity', and that 'all jurisdictions need to work with industry to manage risks'.⁶
- 3.7 Commonwealth, states and territories governments, as well as private industry, have roles and responsibilities relating to biosecurity, including in aquaculture. Biosecurity collaboration is driven by the Intergovernmental Agreement on Biosecurity (IGAB), signed by all states and territory governments in 2019.⁷ IGAB built upon a Memorandum of Understanding on Animal and Plant Quarantine measures signed by all state and territory governments which came into effect in 1995. The IGAB built on the existing agreement, strengthening 'the working partnerships between the Commonwealth, state and territory governments by defining the roles and responsibilities of governments and outlining priority areas for collaboration, to improve the national biosecurity system'.⁸

³ Australian Barramundi Farmers Association (ABFA), *Submission 10*, p. 9; SIA, *Submission 22*, p. 11.

⁴ Australian Prawn Farmers Association (APFA), *Submission 6*, p. 5.

⁵ Department of Agriculture, *AQUAPLAN - Australia's National Strategic Plan for Aquatic Animal Health 2014*.

⁶ Department of Agriculture and Water Resources (DAWR), *National Aquaculture Strategy*, Canberra, September 2017, p. 16.

⁷ *Intergovernmental Agreement on Biosecurity*, [federation.gov.au/sites/default/files/about/agreements/2019-IGA-biosecurity_1.pdf](https://www.federation.gov.au/sites/default/files/about/agreements/2019-IGA-biosecurity_1.pdf), viewed 14 January 2022.

⁸ DAWE, *Roles and responsibilities in a Biosecurity Import Risk Analysis*, www.awe.gov.au/biosecurity-trade/policy/risk-analysis/conducting/roles-responsibilities, viewed 11 January 2022.

- 3.8 At the Commonwealth level DAWE administers the *Biosecurity Act 2015*, which is 'the primary legislation that provides the legal powers for all of Australia's biosecurity activities'.⁹ The Biosecurity Act implements an Appropriate Level of Protection approach which is aimed at reducing risk to a very low level, but not to zero.¹⁰
- 3.9 The states and territories have their own additional biosecurity legislation.¹¹ Domestic stakeholders such as farmers, industry and the community also have a role in the management of biosecurity. Such responsibilities can come in the form of biosecurity plans, participation in response preparedness, or reporting of suspect plant or animal pests.¹²
- 3.10 Stakeholders emphasised the seriousness with which they take the risk of biosecurity failures and the extent of their potential impact on the industry.
- 3.11 The Fisheries Research and Development Corporation (FRDC) stated that Australia faces unprecedented biosecurity challenges, with pests and diseases spreading around the world at higher rates than ever. The FRDC cited evidence from Food and Agriculture Organization of the United Nations (FAO) that there is a global trend for a new pathogen to emerge and spread across national borders every three to five years.¹³
- 3.12 The Australian Barramundi Farmer's Association (ABFA) noted that once a disease is introduced into an aquatic environment, it is very difficult to control.¹⁴
- 3.13 Dr Chapman, Chair of ABFA stated:

These diseases typically kill up to 85 per cent of your stock. There'd be in the order of \$70 million worth of stock in the water at any time, so that's the sort of impact. But what we saw with white spot was that Queensland biosecurity

⁹ DAWE, *Biosecurity: Legislation*, www.awe.gov.au/biosecurity-trade/policy/legislation, viewed 11 January 2022.

¹⁰ DAWE, *Appropriate Level of Protection*, www.awe.gov.au/biosecurity-trade/policy/risk-analysis/conducting/appropriate-level-of-protection, viewed 14 January 2022.

¹¹ For example, Tasmania passed a new *Biosecurity Act* in 2019. Tasmanian Government, Department of Primary Industries, Parks, Water and Environment (DPIPWE), *Submission 18*, p. 14.

¹² DAWE, *Roles and responsibilities in a Biosecurity Import Risk Analysis*, www.awe.gov.au/biosecurity-trade/policy/risk-analysis/conducting/roles-responsibilities, viewed 11 January 2022.

¹³ Fisheries Research and Development Corporation (FRDC), *Submission 24*, pages 18-19.

¹⁴ ABFA, *Submission 10*, p. 9.

came in with tankers of chlorine and killed everything on the farm, including brood stock. If you lose your brood stock as well, that's really devastating.¹⁵

Industry concerns about import standards

- 3.14 The principal concern about biosecurity presented to the Committee related to the risk of imported diseases and the issue of import regulations.
- 3.15 Both the prawn and barramundi farmers' representatives expressed concerns that the Import Risk Analysis for non-salmonid species produced in 1999 had not kept up with changes and was conducted at a time when the industry was much smaller than it is today.¹⁶
- 3.16 Ms Jo-Anne Ruscoe, CEO of ABFA, acknowledged that the industry had received assurances from DAWE that it was continuing to monitor the situation. However, ABFA took the view that the industry would have more confidence in the system if there was greater transparency from the Department, including a full review of the risk analysis.¹⁷
- 3.17 Two specific import-related biosecurity matters raised by stakeholders was the need for decontamination of imported product through cooking and the potential danger of imported whole fish. These concerns were articulated by both the prawn grower and barramundi grower representatives.

Prawn Industry Perspective

- 3.18 The prawn industry's concerns were, understandably, particularly shaped by their experience of the White Spot Disease.¹⁸ While the specific means of introduction of the disease was not discovered, the Inspector-General of Biosecurity concluded that imported prawns were the potential and most probably input pathway for the introduction of the disease. DAWE's scientific advisory group supported this conclusion.¹⁹
- 3.19 APFA acknowledges that there is a market for imported prawns due to their relative cheapness, and as such does not support banning importation.

¹⁵ Dr Ken Chapman, Chair, Australian Barramundi Farmers Association (ABFA), *Committee Hansard*, Canberra, 9 November 2021, p. 4.

¹⁶ APFA, *Submission 6*, p. 9.

¹⁷ Ms Jo-Anne Ruscoe, CEO, ABFA, *Committee Hansard*, Canberra, 9 November 2021, p. 2.

¹⁸ APFA, *Submission 6*, p. 5; NPF Industry Pty Ltd, *Submission 39*, p. 3.

¹⁹ Dr Peter Stoutjesdijk, Director, Marine and Aquatic Biosecurity, Animal Biosecurity Branch, DAWE, *Committee Hansard*, Canberra, 3 June 2021, p. 7.

However, the Association called for appropriate sanitary measures to be applied to high-risk goods to prevent the introduction of diseases to Australia.²⁰

- 3.20 Mrs Kim Hooper, the Executive Officer of APFA, told the Committee that the Association advocates the cooking of imported prawns:

That all prawns are cooked at the border. If that's impossible to do, which it shouldn't be—we don't want to stifle imports, because there's always a price point for imported prawns—then enforcement and compliance need to be resourced a lot more.²¹

Barramundi Industry Perspective

- 3.21 Barramundi industry representatives also expressed concerns about potential dangers from imported product and about existing procedures for biosecurity.²² Unlike the prawn industry, the barramundi industry has not been subjected to the effects of any serious viruses. But both ABFA and SIA stressed the importance of maintaining the optimal health of farmed stock as a precondition for the aquaculture industry reaching its full growth potential.²³

- 3.22 ABFA criticised what it said were deficiencies in regulations about the importation of barramundi, including:

- no mandatory requirements to decontaminate (e.g., cook) imported barramundi (and other species carrying exotic pathogens of concern), or processing wastes (gills, guts, skeletons)
- no routine post-border testing performed on imported uncooked whole and eviscerated barramundi commodities, so the prevalence of exotic pathogens in imported barramundi is unknown
- no routine assessment of imported uncooked eviscerated barramundi relative to import conditions, so the compliance of imported barramundi to import conditions is not known

²⁰ APFA, *Submission 6*, p. 5.

²¹ Mrs Kim Hooper, Executive Officer, Australian Prawn Farmers Association, *Committee Hansard*, Canberra, 8 November 2021, p. 3.

²² ABFA, *Submission 10*, pages 9-10; SIA, *Submission 22*, p. 11; Mr Robert Richards, Managing Director and Board Chairperson, Humpty Doo Barramundi, *Committee Hansard*, Darwin, 26 July 2021, p. 6.

²³ ABFA, *Submission 10*, p. 9; SIA, *Submission 22*, p. 11.

- no measures that prevent further processing of imported uncooked whole and eviscerated barramundi
- no functional controls on uncooked processing waste to prevent it being discarded or released into natural waterways as bait, berley, or cheap disposal
- there are currently no methods in use to categorically determine the country of origin or differentiate farmed and wild-caught whole and eviscerated barramundi.²⁴

3.23 ABFA and Humpty Doo Barramundi submitted that the importation of whole barramundi is a biosecurity risk. Both organisations supported a ban on such product.²⁵ According to ABFA, the 172 tonnes of imported whole barramundi only accounts for eight percent of the total barramundi imports, and that this high-risk gap could easily be filled with fillets.²⁶

3.24 ABFA also draw attention to what it considered to be the improper evisceration of imported barramundi. The Association told the Committee that it had undertaken its own research and had found that a hundred per cent of the products surveyed were found to have remains still in the fish, a situation which ABFA believes is an inappropriate risk.²⁷

3.25 In October 2021 the Fisheries Research and Development Corporation (FRDC) released a report on a study assessing the biosecurity risk of imported uncooked, whole, and head-on eviscerated, barramundi and other finfish, and containing findings which supported the barramundi industry groups' concerns. The study of a sample of seafood from wholesalers and retailers, found a prevalence of exotic disease at a rate of greater than 5 per cent, a level which did not comply with Australian biosecurity requirements.²⁸

3.26 The FRDC report proposed that DAWE consider a review the import risk analysis for non-salmonids (specifically barramundi) and review compliance

²⁴ ABFA, *Submission 10*, p. 10.

²⁵ ABFA, *Submission 10*, p. 10; Mr R Richards, Humpty Doo Barramundi, *Committee Hansard*, Darwin, 26 July 2021, p. 6.

²⁶ ABFA, *Submission 10*, p. 10.

²⁷ Ms Jo-Anne Ruscoe, CEO, ABFA, *Committee Hansard*, Canberra, 9 November 2021, p. 1.

²⁸ FRDC, *Assessing the biosecurity risk of imported uncooked, whole and head-on eviscerated, barramundi and non-salmonid finfish in relation to exotic viruses 2021*, p. 42.

with existing requirements. The report also recommended that the industry should review its on-farm biosecurity measures.²⁹

DAWE's response to industry concerns

- 3.27 In relation to the proposal that imported prawns should be cooked, DAWE submitted that evidence did not support such a measure.
- 3.28 The Department commissioned a report into the issue reviewing the biosecurity risk of imported prawns, which was reviewed by an expert panel.³⁰ The report stated that the cooking of prawns for human consumption does not completely deactivate the White Spot Syndrome Virus. It concluded that complete elimination of WSSV would require, prawns to be boiled at 100°C for 1 minute, a process which would ruin the product for human consumption.³¹
- 3.29 The review recommended that uncooked prawns should be frozen, with the head and shell removed, deveined, inspected and graded, free from diseases and fit for human consumption. Specific testing to manage White Spot and other viruses were also recommended.³²
- 3.30 DAWE acknowledged the concerns of the barramundi industry and was also in the process of conducting its own investigations in response to the findings of the FRDC report. Dr Martin the First Assistant Secretary of DAWE, stated that the Department regularly met with industry representatives and conducted ongoing monitoring of disease risks. Dr Martin pointed out that 88 per cent of imported barramundi is fillets and that while the risk of contamination could not be eliminated, imported barramundi 'still meet our appropriate level of protection, which is very low risk—not zero risk'.³³
- 3.31 In response to concerns about the risk analysis, Dr Martin stated that the analysis:

²⁹ FRDC, *Assessing the biosecurity risk of imported uncooked, whole and head-on eviscerated, barramundi and non-salmonid finfish in relation to exotic viruses 2021*, p. 43.

³⁰ Dr Stoutjesdijk, DAWE, *Committee Hansard*, Canberra, 3 June 2021, pages 6-7.

³¹ DAWE, *The Review of biosecurity risks of prawns imported from all countries for human consumption September 2020*, p. 11.

³² DAWE, *The Review of biosecurity risks of prawns imported from all countries for human consumption September 2020*, p. 10.

³³ Dr Robyn Martin, First Assistant Secretary, Biosecurity Animal Division, DAWE, *Committee Hansard*, Canberra, 25 November 2021, p. 2.

...has been reviewed on a number of occasions and changes have been made, most recently back in mid-2021, which was looking at the diseases and the species of fish that were susceptible to diseases. We constantly keep things under review and will continue to do that and also work with industry. As we get new information, we then relook at the risk and see if it has changed.³⁴

Environmental concerns and public perceptions

- 3.32 The aquaculture industry has, in recent years, been confronted with the problem of negative perceptions in sections of the public about environmental degradation associated with aquaculture. Critiques of both the fishing industry globally and of aquaculture in Australia in film and television documentaries and books have reflected public worries about the damaging effects of fishing on the local and global environment. The Tasmanian salmon industry has been a particular target of criticism.
- 3.33 Much of the debate has centred on the view that the industry is losing what is termed 'social licence'. This term does not mean licencing in a legal sense, but is often used to encapsulate the idea that the public will have a certain level of acceptance of the aquaculture industry and its practices, and that allegations of environmental damage will erode public support. 'Social licence' was defined by the Institute of Marine and Antarctic Studies (IMAS), University of Tasmania, as the 'ongoing acceptance by stakeholders and the public of an aquaculture companies' activities'.³⁵
- 3.34 A loss of public acceptance can reduce demand for products and can generate public and activist opposition to expansion of the industry, especially into new locations. IMAS pointed out that 'there have been several examples of where aquaculture has been threatened as a result of a lack of societal acceptability'.³⁶ Seafood Industry Australia (SIA) mentioned that misinformation and negative perceptions result in producers having to spend time away from their businesses to manage reputational risks.³⁷
- 3.35 The following section reviews the effects of criticisms of the industry's environmental credentials and the issues involved in placing discussion on a firm factual and scientific basis.

³⁴ Dr Martin, DAWE, *Committee Hansard*, Canberra, 25 November 2021, p. 1.

³⁵ University of Tasmania (UTAS), Institute of Marine and Antarctic Studies (IMAS), Submission 13, p. 3.

³⁶ UTAS, IMAS, *Submission 13*, p. 3.

³⁷ SIA, *Submission 22*, p. 8.

The Tasmanian Context

- 3.36 As mentioned above, the centrally important Tasmanian industry has been a special target for criticism. Historically the state's salmon farming industry has enjoyed community approval and social acceptance, but some stakeholders have expressed negative views on the industry.
- 3.37 The Australia Institute Tasmania submitted that in the 1980s eagerness to develop the industry led to overreach and a lack of independent regulation which caused community pushback. The Institute stated that its research had revealed that 63.5 per cent of Tasmanians were concerned that the health of Tasmania's coastal waters and supported a slow-down in the expansion of aquaculture.³⁸ The Institute argued for greater transparency and accountability about potential environmental management issues before the industry was expanded.³⁹ Concluding that 'Tasmania's current regulatory framework is failing to maintain healthy marine ecosystems' the Institute proposed that Tasmania should produce a state-wide marine plan based on an ecosystem-based management approach as the 'best means of managing the complex interactions in marine systems'.⁴⁰
- 3.38 NWTAS for Clean Oceans also attacked what it saw as lack of transparency as a cause of disquiet in the community:

Government at all levels from council through to state and federal, must respond to the community and address the issues that are raised. Ignoring communities to develop more farms at all costs will not only tarnish the industry even further, but it may also lead to an untenable standoff between community and industry that will lead to the demise of that industry in the long term.⁴¹

The organisation also contended that land-based salmon farming is more environmentally sustainable than ocean-based farming and called for the exploration of the possibilities of land-based aquaculture.⁴²

- 3.39 The Tasmanian Alliance for Marine Protection (TAMP) and Neighbours of Fish Farming (NOFF) both submitted that there are widespread concerns in Tasmania about the salmon industry, including 'waste, noise and light

³⁸ The Australia Institute Tasmania, *Submission 27*, p. 2.

³⁹ The Australia Institute Tasmania, *Submission 27*, pages 2-3.

⁴⁰ The Australia Institute Tasmania, *Submission 27*, pages 5-6.

⁴¹ NWTAS for Clean Oceans, *Submission 21*, p. 4.

⁴² NWTAS for Clean Oceans, *Submission 21*, pp. 3-4.

pollution, and impact on wildlife'.⁴³ Further, the groups mentioned the importance of Tasmania's pristine reputation to the state's tourism and hospitality sector, and that problems surrounding the salmon industry could diminish the state's reputation.⁴⁴

Responding to negative perceptions

- 3.40 Australia's aquaculture industry is underpinned by a strong scientific research and development approach. But there are concerns around how much information is available to the public, the extent of public understanding of the science, and the undue influence of sensationalist criticism that is not factually based. Conveying a science-based understanding of aquaculture and responding to deeply-held public concerns about the environment are important tasks for the industry.
- 3.41 In response to criticism of the industry in Tasmania, Seafood Industry Australia (SIA) quoted the words of Colin Buxton, Emeritus Professor at the University of Tasmania:

Tasmanian salmon farming is recognised as being among the best in the world with an Aquaculture Stewardship Council's tick of approval; an independent, scientifically backed gold standard for environmental stewardship and sustainability. Why is this so hard to understand and accept? Equally disturbing is how the industry is portrayed in the media as anything but responsible...⁴⁵

- 3.42 The Fisheries Research and Development Corporation (FRDC) highlighted the importance of countering the unscientific basis of much criticism:

I think the first thing from a science perspective—and I would say that we probably haven't done it well enough—is that we need to be accountable for the science. We need to present it and we need to get it out there, so maybe the detractors at least can be called to account if they don't acknowledge that science. I think that's really important. The second point is that, when people do put distraction, whether it's *Seaspiracy* or whatever the story is, the science

⁴³ Tasmanian Alliance for Marine Protection (TAMP) and Neighbours of Fish Farming (NOFF), *Submission 19*, p. 6

⁴⁴ TAMP and NOFF, *Submission 19*, p. 6.

⁴⁵ SIA, *Submission 22*, p. 8.

community needs to respond. They need to defend their science where possible.⁴⁶

- 3.43 The industry also needs to target the wider perceptions and emotions of the public, behind the simple presentation of facts. SIA, observed that the Australian seafood industry is ‘faced with a challenge of hearts over mind’ which cannot exclusively rely on science and proven facts.⁴⁷ SIA noted that community opinion in the agriculture space can often be influenced by misinformation which is ‘highly dramatized, easy to obtain, produced in shareable quantum to appeal to social networking sites’, and that the information is often sourced from unverified and unregulated sources that are not accountable to peer-review or fact checking.⁴⁸
- 3.44 Public confusion about apparently contradictory views amongst scientists was also mentioned by NWTAS for Clean Oceans.⁴⁹ Both industry and government face the responsibility of ensuring that the public can understand a clear connection between the available scientific evidence and how industry regulations are developed and applied.
- 3.45 SIA therefore urged that:
- Aquaculture stakeholders including industry, government and regulators must unite against misinformation to improve the community’s perception of the Australian aquaculture industry, and enhance its position as a sustainable, responsible source of protein, regional investment and jobs. We must do this through increased support for proactive and reactive community engagement strategies and awareness campaigns.⁵⁰
- 3.46 IMAS stressed the role of a scientific approach to aquaculture regulation, submitting that its research has been ‘pivotal in the development and implementation of science-based management and regulation of the aquaculture sector in Tasmania and abroad’⁵¹ The work contributed to ensuring that Tasmanian aquaculture practices remained sustainable, contributing to ‘the development of monitoring methods and environmental

⁴⁶ Dr Patrick Hone, Managing Director, Fisheries Research and Development Corporation, *Committee Hansard*, Canberra, 24 June 2021, p. 4.

⁴⁷ SIA, *Submission 22*, p. 8.

⁴⁸ SIA, *Submission 22*, p. 8.

⁴⁹ NWTAS for Clean Oceans, *Submission 21*, p. 2.

⁵⁰ SIA, *Submission 22*, p. 8.

⁵¹ UTAS, IMAS, *Submission 13*, p. 7.

standards that have been used to assess environmental performance and compliance of the sector over the past two decades'.⁵²

- 3.47 Stakeholders emphasised that compliance with government environmental regulations and obtaining certification through independent third party verification mechanisms such as Aquaculture Stewardship Council (ASC), Marine Stewardship Council (MSC) and Best Aquaculture Practices (BAP) were a key part of efforts to assure the community that the industry was complying with environmental standards. Ms Angela Williamson from the Tasmanian Salmonid Growers Association expressed it as follows:

The reality is that we are a really highly regulated industry, with 38 pieces of legislation that we have to follow. And not only that: from the regulatory setting, we also have third-party independent world-best certifications that our companies all aspire to and subscribe to. This provides another layer of certainty, scrutiny and confidence in our operations, and it's something that's really important for our retailers and for our consumers.⁵³

- 3.48 Tassal Group submitted that:

Our strategies continue to position us as a leader to meet consumer and market needs and our voluntary third-party certification demonstrate our ongoing commitment to going above and beyond our regulatory settings to meet global sustainability benchmarks.⁵⁴

- 3.49 Similarly, SIA stated that it had 'invested valiantly' in efforts to both engage with the community and to obtain certification in a variety of third-party certification programs.⁵⁵

- 3.50 The Western Australian Government indicated that it would support aquaculture ventures to achieve independent verification through ASC and MSC.⁵⁶

The Aquaculture Workforce

⁵² UTAS, IMAS, *Submission 13*, p. 7.

⁵³ Ms Angela Williamson, Communications Advisory Group Lead, Tasmanian Salmonid Growers Association, *Committee Hansard*, Canberra, 26 November 2021, p. 7.

⁵⁴ Tassal Group, *Submission 44*, p. 1.

⁵⁵ SIA, *Submission 22*, p. 8.

⁵⁶ Western Australian Department of Primary Industries and Regional Development, Aquaculture Development Plan for Western Australia *Submission 32.1*, Attachment 2, p. 31

- 3.51 A capable and resilient workforce is critical to the growth of the Australian aquaculture industry. The following section discusses challenges facing the industry in training and education, and the availability of labour, particularly in the context of issues caused by the remote locations of some aquaculture production sites.
- 3.52 The importance of the aquaculture workforce was acknowledged by the National Aquaculture Strategy, which paid particular attention to the improvement of training and education as a priority to ensure that the industry's employment needs are met, and that the workforce can find career pathways in the industry.⁵⁷
- 3.53 The Commonwealth Government responded to the Strategy and supported its findings about the need to attract, retain, and upskill workers.⁵⁸ The Government has committed to supporting the agriculture industry to reach a farm output of \$100 billion by 2030, with a \$850 million agriculture 2030 package in the 2021-22 budget which included:
- \$400.1 million to strengthen biosecurity
 - \$29.8 million to grow the agricultural workforce
 - \$15.0 million to improve trade and market access.⁵⁹
- 3.54 DAWE also expects that the aquaculture industry will benefit from other previously announced measures for the agricultural sector, including:
- the \$328 million Busting Congestion for Agricultural Exporters package
 - finalising free trade agreement negotiations with the European Union and United Kingdom
 - budget increases for the International Freight Assistance Mechanism (IFAM)
 - access to capital through loans from the Regional Investment Corporation
 - assistance to farming, forestry and fishing exporters to expand and diversify export markets through the Agri-Business Expansion Initiative (ABEI).⁶⁰

⁵⁷ Department of Agriculture and Water Resources (DAWR), *National Aquaculture Strategy*, Canberra, September 2017, p. 8.

⁵⁸ See: DAWE, *Building The Agricultural Workforce of The Future: The Australian Government Response to the National Agricultural Workforce Strategy December 2021*.

⁵⁹ DAWE, *Submission 25*, p. 8.

⁶⁰ DAWE, *Submission 25*, p. 8.

- 3.55 The availability of workers was identified by stakeholders as a key issue which limits the potential growth of the industry. Aquaculture operations require a range of skills, but the Committee was informed that a specific breakdown of the number of skilled, semi-skilled and unskilled workers working in the industry does not exist.⁶¹
- 3.56 The Committee received evidence about the problems of attracting and retaining sufficient skilled labour to the industry. For example, ABFA submitted that the 'availability of suitably skilled labour has been identified by the barramundi farming sector as a major growth blocker over the next five years'. It cited the example of the industry in northern Australia which will need between 1400 and 2300 new skilled staff by 2030 to support projected industry growth.⁶² A number of other submitters expressed similar views about the difficulties that many operators were confronting in attracting and retaining workers with the necessary skills and training.⁶³
- 3.57 IMAS highlighted the growing demand for skilled labour in aquaculture, noting that 'in the past 12 months job advertisements for positions in aquaculture have increased by 41 per cent, the second highest sector growth [and] the highest median advertised salary of \$79,500'.⁶⁴
- 3.58 The industry has historically been dependent on foreign labour, including seasonal backpacker workers as well as skilled migrants, to make up labour shortfalls. This feature of the industry has proved to be a major weakness during the Covid-19 pandemic when border restrictions prevented the arrival of overseas workers. Some operators were even considering 'fallowing' or suspending production in 2022 due to their inability to obtain workers or to obtain them at a reasonable cost.⁶⁵
- 3.59 Plans for industry expansion, together with technological changes will also generate increased demand for labour with new and upgraded skills. The APFA submitted that:
- ...there is a need to attract, retain and develop the workforce as the industry experiences rapid expansion and upgrades in the next few years. It is expected that there will be a shift in skills of the prawn farming industry's workforce

⁶¹ SIA, *Submission 22.1*, p. 1.

⁶² ABFA, *Submission 10*, p. 7.

⁶³ Mr Richards, Humpty Doo Barramundi, *Committee Hansard*, Darwin, 26 July 2021, p. 5; Maxima Pearlina Company, *Submission 4*, p. 4, Petuna Aquaculture, *Submission 33*, p. 5.

⁶⁴ UTAS, IMAS, *Submission 13*, p. 4.

⁶⁵ APFA, *Submission 6*, p. 4.

with businesses investing in advanced technology to automate many of their systems that are currently relying on hands-on technicians. This is not believed to minimise the number of people needed to work on farm, but rather move their roles to another position through upskilling. In addition, changes to regulations will increase the need for skilled workers in food safety, biosecurity, occupational health and safety and environmental compliance.⁶⁶

- 3.60 In a similar vein, Petuna Aquaculture, a Tasmanian aquaculture venture, noted that ‘as the industry becomes more technologically advanced’, there will be increased need for a workforce with higher levels of skills.⁶⁷
- 3.61 Some industry representatives were critical of the education and training provided by universities and registered training organisations (RTOs).
- 3.62 APFA submitted that ‘the current education system is not fit for purpose’⁶⁸, noting that the Association is:

...working on reviewing the workforce system to gain knowledge of what is needed now, what the current skills gaps are and what the potential future roles are needed. Support is needed to attract participation within the educational systems such as schools, VET providers, tertiary education and apprenticeship pathways.⁶⁹

- 3.63 Petuna Aquaculture submitted that educational institutions needed to ‘identify areas of weakness’ in existing curriculums, including by ‘engaging with the industry to develop appropriate learning outcomes’ which would strengthen their courses.⁷⁰
- 3.64 Petuna Aquaculture argued that:

...RTOs are becoming more and more reluctant to take on new areas of training due to the demanding level of regulation in the sector, including the cost of meeting that regulation. If a business requires training outside the existing scope of training, an RTO needs to be fully compliant in all areas of new delivery before a single student can be enrolled or before a course can even be advertised.⁷¹

⁶⁶ APFA, *Submission 6*, p. 4.

⁶⁷ Petuna Aquaculture, *Submission 33*, p. 5.

⁶⁸ APFA, *Submission 6*, p. 4.

⁶⁹ APFA, *Submission 6*, p. 5.

⁷⁰ Petuna Aquaculture, *Submission 33*, p. 5.

⁷¹ Petuna Aquaculture, *Submission 33*, p. 5.

3.65 Mr David Wood, CEO of Yumbah Aquaculture, added his voice to calls for policy and planning for the aquaculture workforce stating:

...we would encourage policy that addresses the need for a higher skills based workforce, and our education systems need to plan for and support these future skills to be delivered.⁷²

3.66 IMAS noted that aquaculture had a special challenge in attracting and retaining skilled workers in coastal and regional communities 'where education attainment and the ability to meet tertiary entrance requirements is often limited'.⁷³ The Institute argued that alternative study pathways had been hampered by changing courses and content between RTOs. In an effort to meet specialised local needs, the Institute stated that it offered courses that provided:

...an alternate study opportunity for students without tertiary entrance requirements to undertake a different pathway into tertiary education. Remote work-embedded study programs also offer great potential ... in specific skillsets like selective breeding, fish nutrition and health, engineering, business, and ICT.⁷⁴

3.67 The remote location of some aquaculture operations created other workforce problems. There can be difficulty in attracting and retaining skilled and unskilled workers to regions with limited services and amenities.⁷⁵ For example, the Aquaculture Council of Western Australia noted that it was necessary to offer prospective workers 'appropriate incentives where the work available is in remote regional areas'.⁷⁶

3.68 Aquaculture industry groups discussed the challenges of operating in regional locations due to the lack of infrastructure and services. In particular, infrastructure issues include lack of road and rail transport, ports, storage facilities, telecommunications as well as social infrastructure such as schools

⁷² Mr David Wood, CEO, Yumbah Aquaculture, *Committee Hansard*, Canberra, 26 November 2021, p. 12.

⁷³ UTAS, IMAS, *Submission 13*, p. 4

⁷⁴ UTAS, IMAS, *Submission 13*, p. 4.

⁷⁵ SIA, *Submission 22*, p. 12.

⁷⁶ Aquaculture Council of Western Australia (ACWA), *Submission 2*, p. 5.

and hospitals.⁷⁷ APFA also noted that there is ‘a lack of support for families moving to remote areas’.⁷⁸

3.69 SIA discussed a proposal to establish a National Australian Seafood Careers Platform with a:

...database of labour that can be used to promote careers and further training opportunities. Facilitating and co-ordinating the movement of existing labour between fishing and harvesting seasons, and regional locations will provide security and improved retention of labour.⁷⁹

3.70 IMAS also mentioned efforts to support workforce mobility as a way to encourage workers to stay in the industry:

Companies have also addressed staff retention by providing more workplace flexibility, staff development pathways and staff mobility between sections of companies among other strategies.⁸⁰

3.71 Ms Papacosta from SIA also stressed the importance of providing training, skills development and varied career paths for staff so that, once attracted to aquaculture, they could be retained as part of the industry workforce.⁸¹

3.72 To address issues experienced by the agriculture workforce, the National Agricultural Labour Advisory Committee produced the National Agricultural Workforce Strategy in December 2020. The Committee found that there was a need for education at all levels of the agriculture workforce and that the best way of providing that is for learning to be driven by the enterprises’ owners, managers and the workers themselves. But there is also a role for governments in helping to enable and facilitate learning and innovation.⁸²

⁷⁷ Ridley Corporation, *Submission 5*, p. 7; APFA, *Submission 6*, p. 5; SIA, *Submission 22*, p. 12; FRDC, *Submission 24*, p. 17.

⁷⁸ APFA, *Submission 6*, p. 6.

⁷⁹ SIA, *Submission 13*, p. 12.

⁸⁰ UTAS, IMAS, *Submission 13*, p. 4.

⁸¹ Ms Veronica Papacosta, Chief Executive Officer, Seafood Industry Australia, *Committee Hansard*, Canberra, 26 August 2021, p. 5.

⁸² National Agriculture Labour Advisory Committee, *National Agricultural Workforce Strategy December 2020*, pages. Xiii-xiv

Capital and Investment

- 3.73 The availability of capital and investment is imperative for the growth of aquaculture, as acknowledged by the National Aquaculture Strategy. The Strategy notes that agribusiness and food are amongst the Commonwealth Government's national investment priorities, and that aquaculture is a sector with significant growth and diversification potential.⁸³ Capital and investment in research and development is also critically important and is discussed in the Strategy as a major contributor to innovation, productivity, efficiency and growth in the industry.⁸⁴
- 3.74 There is a range of Commonwealth and state and Northern Territory mechanisms through which capital and investment support is provided to the aquaculture industry.
- 3.75 The Commonwealth Government entity, the Northern Australia Infrastructure Facility (NAIF) was established in 2016 by the *Northern Australia Infrastructure Facility Act 2016*.⁸⁵ NAIF provides financial assistance to states and territories and other entities for the development of northern Australia economic infrastructure, including aquaculture.⁸⁶
- 3.76 The Regional Investment Corporation provides access to capital to aquaculture through its loans to farms and agri-business.⁸⁷ A small number of aquaculture companies had used the facility for loans for capital investment in their facilities.⁸⁸
- 3.77 The Commonwealth's investment in fisheries research and development is led by the Fisheries Research and Development Corporation (FRDC).⁸⁹ The FRDC was formed as a statutory corporation under the provisions of the

⁸³ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 26.

⁸⁴ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 11

⁸⁵ Department of Finance, *Northern Australia Infrastructure Facility*, www.finance.gov.au/government/australian-government-investment-funds/northern-australia-infrastructure-facility, viewed 17 January 2022.

⁸⁶ Department of Finance, *Northern Australia Infrastructure Facility*, www.finance.gov.au/government/australian-government-investment-funds/northern-australia-infrastructure-facility, viewed 17 January 2022.

⁸⁷ DAWE, *Submission 25*, p. 8

⁸⁸ Ms Emma Campbell, First Assistant Secretary, Department of Agriculture and Water Resources, *Committee Hansard*, Canberra, 3 June 2021, p. 5.

⁸⁹ FRDC, *About FRDC*, www.frdc.com.au/about-frdc, viewed 17 January 2022.

Primary Industries Research and Development Act 1989 and is responsible to the Minister of Agriculture. The Corporation is involved in planning and investment in fisheries research and development by providing leadership and coordination of the ‘monitoring, evaluating and reporting on R&D activities, and facilitating information dissemination, extension and commercialisation’.⁹⁰

- 3.78 With the growth of Australia’s aquaculture, FRDC has increased its funding to address the priorities of the sector. FRDC engages with Australia’s jurisdictions and specific industry sectors through the Industry Partnership Agreements. Investments have been executed by a suite of public and private providers, including CSIRO, the Australian Institute of Marine Science, universities, state-based research agencies such as the South Australian Research and Development Institute, and independent consultants.⁹¹ The total value of aquaculture research and development projects managed by FRDC over the past five years is \$108.7 million. Investments are primarily related to addressing industry production issues (such as, aquatic diseases, improved culture methods and genetics) as well as, increasingly, environmental research.⁹²
- 3.79 The Queensland Department of Agriculture and Fisheries (DAF) undertakes research, development and extension with an interest in driving the growth of the state’s aquaculture industry. DAF partners with industry and other research providers to identify new production species, with the aim to reduce risks for interested industry groups. The Queensland Government has also provided ongoing support to Queensland aquaculture operators since the 2016 White Spot outbreak, to help protect farmer’s investments and maximise the economic and social benefits of expected expansion.⁹³
- 3.80 In Tasmania in 2011, the state government and the University of Tasmania, through the Institute of Marine and Antarctic Studies, formed the Sustainable Research Collaboration Agreement (SMRCA) which supports the effective and sustainable management of Tasmania’s living marine resources. SMRCA provides support to fisheries and aquaculture through environmental research and development services.⁹⁴ Priority areas include:

⁹⁰ FRDC, *About FRDC*, www.frdc.com.au/about-frdc, viewed 17 January 2022.

⁹¹ FRDC, *Submission 24*, p. 5.

⁹² FRDC, *Submission 24*, p. 6.

⁹³ Queensland Government, Department of Agriculture and Fisheries, *Submission 35*, p. 12.

⁹⁴ Tasmanian Government DPIPW, *Submission 18*, p. 18.

- management and stewardship of Tasmanian marine aquaculture, including oysters and salmon
- research and development into species of commercial potential in Tasmania and globally
- understanding environmental ecosystem changes in the coastal environment
- further development of the Tasmanian salmonid marine farming industry
- evaluation of biosecurity risks for all seafood sectors
- understanding the social and economic impact of aquaculture at the local, regional and national levels.⁹⁵

3.81 The Northern Territory Government has initiated a \$4.1 million project aimed at addressing key barriers to the development of the aquaculture sector. The project includes a partnership between the Northern Territory Department of Industry, Tourism and Trade (DITT), the Cooperative Research Centre for Developing Northern Australia, the Anindi Iyakwa Land Council and the Yagbani Aboriginal Corporation. The partnership is working on a commercialisation trial for hatchery production and farming of native Blacklip Rock Oysters.⁹⁶

3.82 The Western Australian Government described its approach to methods of supporting the growth of aquaculture in the Aquaculture Development Plan for Western Australia 2020. The plan outlines the Government's foundational elements and priority actions to support growth in WA aquaculture:

- Strategic planning, management and coordination
- Biosecurity and fish health
- Research and development
- Regulatory framework
- Infrastructure
- Economic development.⁹⁷

⁹⁵ Tasmanian Government DPIPW, *Submission 18*, pages 18 and 19.

⁹⁶ Northern Territory Government, Department of Industry, Tourism and Trade, *Submission 34*, p. 2.

⁹⁷ Government of Western Australia Department of Primary Industries and Regional Development, *Aquaculture Development Plan for Western Australia 2020*.

Accessibility of Capital and Investment

- 3.83 The Committee heard a range of views from stakeholders about the opportunities and constraints they face in obtaining capital and investment. It was notable that while industry stakeholders identified that aquaculture operators had to manage ‘costs of capital and commercial risk’⁹⁸, in the same way as businesses in all sectors of the economy, they did not specially highlight the issue as a major barrier to growth. The inquiry did not receive any significant amount of evidence about issues associated with obtaining finance through the banking sector.
- 3.84 In the view of FRDC, the Australian aquaculture industry has historically had difficulty attracting investment from private equity groups due to the small scale of most operations and their lack of vertical and horizontal integration. Aquaculture is capital intensive, requiring investment in production infrastructure and working capital, as well as financing for further investment as production grows. But, for investors, it was difficult to evaluate the attractiveness of the industry, particularly because many aquaculture operations take place on water, with little or no real property rights attached to the producing assets.⁹⁹
- 3.85 The FRDC considered, however, that the situation has been changing in recent years with the appearance of a number of aquaculture companies listed on the Australian Stock Exchange. These companies have been expanding their businesses across multiple sectors within the industry, bringing ‘virtual integration, market power and established supply chains’.¹⁰⁰ FRDC noted that the industry stakeholders identified vertical integration as one successful business model for improving market access and protecting brand image.¹⁰¹
- 3.86 Dr Richard Knuckey, the managing director of The Company One, a Queensland producer of grouper fish, reinforced the view that finding

⁹⁸ The Tasmanian Department of Primary Industry, Parks, Water and Environment noted the issue as only one of the many matters that were often raised during the Department’s industry engagements. Tasmanian Government DPIPW, *Submission 18*, p. 13.

⁹⁹ FRDC, *Submission 24*, pages 15-16.

¹⁰⁰ FRDC, *Submission 24*, p. 16.

¹⁰¹ FRDC, *Submission 24*, p. 16.

capital was most challenging for small scale operators looking to expand their business.¹⁰²

- 3.87 Mr Boris Musa, Managing Director and CEO of Mainstream Aquaculture, informed the Committee that his company had not had concerns about being able to get finance to support the growth of their business, with Mainstream Aquaculture having an investment plan involving \$70 million over the next five years.¹⁰³
- 3.88 With regard to the particular financing needs of aquaculture in northern Australia, the role of NAIF was commended by the Tassal Group and Humpty Doo Barramundi.¹⁰⁴ Dr Daniel Richards, Chief Executive Officer of Humpty Doo Barramundi described NAIF 'as a very appropriate mechanism for development in northern Australia'. Although NAIF charged the company near to commercial interest rates, it was 'a bit more patient' than commercial banks and half of the company's finance had been provided through the Fund.¹⁰⁵
- 3.89 Stakeholders paid particular attention to central role of investment in research and development in aquaculture. For example, Dr Knuckey, described his business as 'extremely R&D intensive'.¹⁰⁶ Industry representatives emphasised the importance of support provided by the Commonwealth, state and Northern Territory governments.
- 3.90 Petuna Aquaculture described the importance of FRDC to the growth of aquaculture. The company submitted that FRDC's research, development and innovation projects had been pivotal, 'including the development of vaccines, selective breeding programs, disease management and environmental monitoring and modelling'.¹⁰⁷ Petuna Aquaculture drew the Committee's attention to the increasing competition for funding between

¹⁰² Dr Richard Knuckey, Managing Director, The Company One Pty, *Committee Hansard*, Canberra, 8 November 2021, p. 15.

¹⁰³ Mr Boris Musa, Managing Director and Chief Executive Officer, Mainstream Aquaculture, *Committee Hansard*, Canberra, 9 November 2021, p. 10.

¹⁰⁴ Tassal Group, *Submission 44*, p. 4; Dr Daniel Richards, Chief Executive Officer, Humpty Doo Barramundi, *Committee Hansard*, Canberra, 26 July 2021, p. 4.

¹⁰⁵ Dr Richards, Humpty Doo Barramundi, *Committee Hansard*, Canberra, 26 July 2021, p. 4.

¹⁰⁶ Dr Knuckey, The Company One Pty, *Committee Hansard*, Canberra, 8 November 2021, p. 15.

¹⁰⁷ Petuna Aquaculture, *Submission 33*, p. 3.

fisheries and aquaculture groups, due to the increasing growth of aquaculture.¹⁰⁸

- 3.91 Tassal Group also noted that the FRDC's ability to support growth is constrained by competition for research funds between wild capture fisheries and aquaculture. Tassal Group highlighted the importance of innovation to growth, and expressed the view that the FRDC cannot provide for research and development without additional investment from government and industry.
- 3.92 Dr Knuckey mentioned that his company had struggled to obtain FRDC funding because their company did not meet the profile of current FRDC priorities.¹⁰⁹ More generally, Dr Knuckey observed that many aquaculture operations started out as family businesses and did not always have the corporate knowledge about the most effective ways to link into funding sources.¹¹⁰
- 3.93 ABFA discussed the importance of innovation, investment, and access to research for the sector's ability to improve and expand. The Association considered that Australia is generally well supported with world class research, and mentioned that ABFA had entered into an Industry Partnership Agreement with the FRDC which the Association considered an 'effective model for government and industry co-investment in industry led research development and extension'.¹¹¹
- 3.94 Jo Kelly, Chair of the Australian Seaweed Alliance, discussed with the Committee the funding challenges experienced by the seaweed industry. Jo Kelly mentioned the Commonwealth Government's Marine Bioproducts Cooperative Research Centre which is provided with \$70 million in matched funding over the next 10 years.¹¹² However, the funding is not exclusively for seaweed and there is a need for greater funding. The industry is also challenged by the fact that the funding is 'matched funding', as companies in the industry are mostly 'pre-revenue'.¹¹³ Jo Kelly expressed the view that

¹⁰⁸ Petuna Aquaculture, *Submission 33*, p. 3.

¹⁰⁹ Dr Knuckey, The Company One Pty, *Committee Hansard*, Canberra, 8 November 2021, p. 15.

¹¹⁰ Dr Knuckey, The Company One Pty, *Committee Hansard*, Canberra, 8 November 2021, p. 15.

¹¹¹ ABFA, *Submission 10*, p. 11.

¹¹² Jo Kelly, Chair, Australian Sustainable Seaweed Alliance (ASSA), *Committee Hansard*, Canberra, 8 November 2021, p. 7.

¹¹³ Jo Kelly, ASSA, *Committee Hansard*, Canberra, 8 November 2021, p. 7.

government investment is currently ‘fragmented into small-scale projects, [with] a lack of focus and direction on industry needs’, and proposed that there be more specific input from the industry about the allocation of support.¹¹⁴

Proposals for Change

- 3.95 Stakeholders outlined a number of suggestions for changes to government programs to support investment in the growth of aquaculture in Australia.¹¹⁵
- 3.96 Tassal Group proposed the establishment of a Commonwealth grants program that ‘unlocked growth through innovation and infrastructure builds’. The company suggested that such a program could be administered similar to funding available through the Australian Renewable Energy Agency (ARENA) for its Renewable Hydrogen Development Fund to advance the expansion of Australia’s hydrogen industry.¹¹⁶
- 3.97 SIA recommended that the ‘dedicated aquaculture zones’ that had been successful in South Australia and Western Australia should be created in other jurisdictions. The Association stated that the zones had reduced the ‘perceived risk as assessed by financial institutions when assessing an aquaculture operation’s application for capital funding’ because they had reduced the regulatory burden and accelerated the approvals process.¹¹⁷
- 3.98 Petuna Aquaculture proposed the establishment of an industry development fund ‘offering government loans with lowered interest options for capital projects that support the expansion of aquaculture’, noting that capital expenditure was a barrier to entry for start-up companies and for expansion by existing companies.¹¹⁸
- 3.99 In relation to the FRDC, several stakeholders proposed that there should be more investment specifically targeted at aquaculture, along with fisheries in general.¹¹⁹
- 3.100 Tassal Group and Huon Aquaculture put forward the idea that the FRDC should be split into two entities, one focussed on wild-capture fisheries and

¹¹⁴ Jo Kelly, ASSA, *Committee Hansard*, Canberra, 8 November 2021, p. 7.

¹¹⁵ Australian Institute of Marine Science, *Submission 15*, p. 4.

¹¹⁶ Tassal Group, *Submission 44*, p. 4.

¹¹⁷ SIA, *Submission 22*, p. 10.

¹¹⁸ Petuna Aquaculture, *Submission 33*, p. 4.

¹¹⁹ ACWA, *Submission 2*, p. 2.

the other focussed exclusively on aquaculture. Tassal Group believed that ‘this would align project efficacy that recognises the differing objectives of the two industries, whilst providing value for money on investment from industry’.¹²⁰ Huon Aquaculture added that the growth of aquaculture provided justification for such a split.¹²¹

- 3.101 Petuna Aquaculture suggested that there should be a dedicated body to concentrate on aquaculture-specific objectives in research, development and innovation.¹²²
- 3.102 James Cook University (JCU) discussed the problem that it is often difficult to translate university led innovations to industry use. This is due to lack of experience in progressing innovations to commercial reality. JCU submitted that a solution could be an ‘innovation/accelerator program for start-up companies specific to the sector to help draw out the innovations and move the innovative science from lab to the industry’.¹²³
- 3.103 The Nature Conservancy Australia advocated greater investment to ensure that the growth of the Australian aquaculture industry coincides with sustainable development. The organisation proposed a system of incentives and rewards for businesses that incorporate ‘restorative aquaculture’ principles in their production processes.¹²⁴ The Nature Conservancy Australia also considered that collaboration between the ‘Conservation Aquaculture’ sub-sector and commercial aquaculture should be strengthened, because this would both increase innovation and address environmental problems.¹²⁵ The organisation argued that investment into conservation aquaculture research and innovation has:

...the ‘potential to develop new businesses, commercial products and processes that support and enhance other sectors such carbon farming, biomedical and pharmaceutical, materials technology, veterinary science and biosecurity’.¹²⁶

¹²⁰ Tassal Group, *Submission 44*, p. 4.

¹²¹ Huon Aquaculture, *Submission 31*, p. 3.

¹²² Petuna Aquaculture, *Submission 33*, p. 3.

¹²³ James Cook University, *Submission 8*, p. 3.

¹²⁴ The Nature Conservancy Australia, *Submission 40*, p. 2.

¹²⁵ The Nature Conservancy Australia, *Submission 40*, p. 5.

¹²⁶ The Nature Conservancy Australia, *Submission 40*, p. 5.

Committee comment

- 3.104 The Committee considers that biosecurity is critical to the viability of individual aquaculture ventures and to the sustainability of the industry as a whole. A major failure in biosecurity could wreck businesses and damage Australia's international reputation for high quality aquaculture products. The Committee took particular note of the concerns about biosecurity standards expressed by aquaculture industry representatives and their fears about possible damage to the industry. These concerns are understandable given the experience with White Spot Disease and they could have a dampening effect on the confidence necessary for investment for growth. The Committee supports industry efforts to ensure that the appropriate risk analysis is maintained and that import regulations are complied with.
- 3.105 The Committee considers that it is the responsibility of all stakeholders to be vigilant in the application of biosecurity measures. These include not only government regulations and monitoring, but also the continuing review of on-farm biosecurity practices by producers.
- 3.106 The Committee notes that the aquaculture industry, particularly the salmon industry in Tasmania, has been the subject of sustained criticism of its environmental management standards and practices. While the Committee acknowledges the critical importance of environmental protection, it considers that much of the criticism has been based on sensationalist media reporting and has lacked a foundation in the scientific evidence.
- 3.107 The industry is aware that environmental sustainability is a key to the future of aquaculture in Australia. Sustainable practices are vital for the health of fish stocks and for the maintenance of production. The industry depends on public and consumer confidence that high environmental standards are maintained, including for the expansion of production into new areas. The Committee commends efforts by producers and aquaculture industry organisations to engage with the community and provide scientifically-based information about the industry's efforts to continuously improve its environmental practices.
- 3.108 The Committee notes that shortages of skilled and unskilled labour are a major constraint to the growth of Australian aquaculture. Border restrictions due to the Covid-19 pandemic have made these more obvious, but the underlying issue has existed for some time. These shortages are related to training and education, as well as to the challenges of attracting workers to regional and remote locations.

- 3.109 The Committee considers that a key to overcoming skills and labour shortages lies in training and education tailored to industry needs. There is an opportunity for the aquaculture industry, registered training providers and relevant state and NT government agencies to cooperate in the development of specialised training pathways and professional development programs for aquaculture.
- 3.110 The Committee notes the concerns expressed by aquaculture industry representatives that current government support for the sector's capital investment and research and development needs are not sufficiently tailored for the specific needs of aquaculture, as distinct from fisheries and agriculture in general.

Recommendation 1

- 3.111 The Committee recommends that the Department of Agriculture, Water and the Environment work with aquaculture industry representatives to ensure that Australian producers have the assurance that the Department's ongoing reviews of the Import Risk Analysis for imported non-salmonid fish species are appropriately rigorous and up-to-date.**

Recommendation 2

- 3.112 The Committee recommends that the Commonwealth Government and the Fisheries Research Development Corporation strengthen their efforts to support Seafood Industry Australia and the aquaculture industry more broadly to improve community awareness of the ecological sustainability and safety of Australian aquaculture produce.**

Recommendation 3

- 3.113 The Committee recommends that the Commonwealth Government work with the aquaculture industry, training providers and state and relevant Northern Territory government agencies to develop specialised training pathways and profession development programs to strengthen the aquaculture workforce.**

Recommendation 4

- 3.114 The Committee recommends that the Commonwealth Government consider programs and incentives to encourage workers to take up**

regional aquaculture employment and to support the growth of the industry.

Recommendation 5

3.115 The Committee recommends that the Commonwealth Government consider the establishment of an aquaculture industry development fund to provide grants and loans to both established and emerging aquaculture ventures.

Recommendation 6

3.116 The Committee recommends that the Commonwealth Government review research and development funding for aquaculture through the Fisheries Research and Development Corporation to ensure that it meets the specific needs of the sector.

4. Naming and labelling seafood products

- 4.1 As noted in the previous chapters of this report, consumer trust in the reputation of Australian-farmed seafood as a premium, safe and sustainable product is likely to have a significant bearing on the ongoing growth of the aquaculture sector in this country. However, this trust is reliant on accurate labelling of a seafood product at the point of sale: what is it and where did it come from?
- 4.2 A consistent theme from witnesses and submitters to the inquiry was the concern that the current standards for naming and labelling seafood in Australia – whether local or imported, farmed or wild-caught – are not sufficient to ensure consumers understand what is on their plate, particularly in foodservice settings.
- 4.3 This chapter provides an outline of the current frameworks for seafood labelling in Australia, examines concerns raised in the inquiry by the seafood and aquaculture sector, considers previous inquiries into these matters, and makes recommendations for a pathway forward.

Current framework for seafood labelling

- 4.4 All seafood sold in Australia is subject to standards and regulations designed to ensure consumers are provided with information about the products they are purchasing and consuming.
- 4.5 At a national level, seafood products are required to conform with the Australian New Zealand Food Standards Code (Food Standards Code) and country of origin labelling requirements under Australian Consumer Law, while seafood sold in the Northern Territory is also subject to territory-

specific country of origin labelling regulations. In addition to those mandatory requirements, there is also a voluntary Australian Fish Names Standard (Fish Names Standard) which prescribes standard names for all fish sold in Australia. These standards and regulations are set out below.

Fish Names Standard

- 4.6 The Fish Names Standard prescribes a standard name for each of the over 4000 species of fish produced or traded in Australia. It was first adopted as an official standard in 2007 and its use in fisheries, aquaculture, trade, and food settings is currently voluntary.¹
- 4.7 The Fish Names Standard is developed and maintained by the Australian Fish Names Committee, established by the Fisheries Research and Development Corporation (FRDC), which includes members and experts from across seafood industry, fisheries, retail, hospitality, and government.² It is reviewed and updated at regular intervals, with any proposed amendments subject to assessment against the Standard Fish Name Protocols and a process of public consultation ahead of inclusion.³

Food Standards Code

- 4.8 The Food Standards Code establishes how all food products in Australia and New Zealand must be labelled for sale and consumption. It sets out a range of general labelling requirements, such as information about ingredients, expiry dates, and substances added to foods, as well as specific requirements for certain classes of foods.⁴
- 4.9 Under the Food Standards Code, in addition to general labelling requirements which apply to all foods, seafood products are subject to Standard 2.2.3 - Fish and fish products. This standard requires labels to include a declaration if a fish product is formed or joined fish. It also provides an Advisory Note about both the Fish Names Standard in Australia

¹ [Australian Fish Names Standard AS 5300-2015](#). A searchable online database of the fish names in this standard is available at www.fishnames.com.au.

² Seafood Standards, *Fish Names Committee*, seafoodstandards.com.au/fish-names-standard/fish-name-committee, viewed 6 December 2021.

³ Fisheries Research and Development Corporation (FRDC), [Standard Fish Names Protocols](#), 11 November 2015.

⁴ Food Standards Australia New Zealand (FSANZ), *Food Standards Code*, www.foodstandards.gov.au/code/Pages/default.aspx, viewed 6 December 2021.

and of fish names requirements in New Zealand, but it does not mandate the use of either.⁵

- 4.10 Adherence with the Food Standards Code is mandatory, and compliance in Australia is generally monitored by food authorities in each state and territory. The Australian Government Department of Agriculture, Water and the Environment also has a role in inspecting and sampling imported foods.⁶
- 4.11 Food Standards Australia New Zealand (FSANZ) is the statutory authority responsible for maintaining the Food Standards Code in line with food regulation policy developed by the Food Ministers' Meeting, formerly known as the Australia and New Zealand Ministerial Forum on Food Regulation, made of up of each of the ministers in Australia and New Zealand responsible for food regulation.⁷

Country of Origin Labelling Information Standard

- 4.12 The Country of Origin Food Labelling Information Standard 2016 (Country of Origin Standard) requires that most food products sold in retail settings in Australia be labelled with information about the country where the product was grown, produced, made or packed.⁸ It has been a mandatory requirement under the Australian Consumer Law since 2018 and its use is enforced by the Australian Competition and Consumer Commission and state and territory consumer protection agencies.⁹
- 4.13 Labelling requirements differ depending on whether the food was grown, produced, made or packaged in Australia or in another country, but in general the Country of Origin Standard requires a statement of origin and/or a standard mark (a green and gold kangaroo logo and a graphic showing the

⁵ [Australia New Zealand Food Standards Code, Standard 2.2.3 – Fish and fish products.](#)

⁶ FSANZ, *Food enforcement contacts*, www.foodstandards.gov.au/about/foodenforcementcontacts/Pages/default.aspx, viewed 6 December 2021.

⁷ FSANZ, *About FSANZ*, August 2020, www.foodstandards.gov.au/about/Pages/default.aspx, viewed 6 December 2021; FSANZ, *The Food Ministers' Meeting*, July 2021, www.foodstandards.gov.au/code/fofr/Pages/default.aspx, viewed 6 December 2021.

⁸ [Country of Origin Food Labelling Information Standard 2016.](#)

⁹ Australian Competition and Consumer Commission (ACCC), [Country of origin food labelling: Fact Sheet](#), April 2019.

proportion of Australian ingredients) to be present on packaging or a label for the food product.¹⁰

- 4.14 All food sold in foodservice, such as restaurants, cafes, canteens and catering, is exempt from the Country of Origin Standard. Any inclusion of country of origin information provided by businesses in these settings is entirely voluntary but, under Australian Consumer Law protections, must not be false, misleading or deceptive.¹¹

Seafood labelling in the Northern Territory

- 4.15 Since 2008, the Northern Territory has required all fish retailers advertising seafood for sale to the public in the territory – including restaurants, cafes, take-aways and fish and chip shops – to clearly state if that seafood is an imported product.¹²
- 4.16 The Northern Territory is currently the only jurisdiction in Australia to have introduced a mandatory country of origin labelling requirement for seafood in foodservice settings.

Key issues raised in this inquiry

- 4.17 Several witnesses and submitters from across the aquaculture and seafood sectors discussed seafood labelling in Australia and how changes to the current framework could contribute to significant growth in Australian aquaculture and the Australian seafood sector more broadly.

Mandating fish names

- 4.18 The intent of the Fish Names Standard, when it was introduced, was primarily to ensure consumers were not confused by multiple names for the

¹⁰ [Country of Origin Food Labelling Information Standard 2016](#), Part 1.6; ACCC, [Country of Origin food labelling: A guide for business](#), March 2021.

¹¹ ACCC, [Country of origin food labelling: Fact Sheet](#), April 2019; FSANZ, [Approval report – Proposal P1041: Removal of Country of Origin Labelling Requirements](#), 29 June 2016, p. 3; Department of Industry, Innovation and Science, [Seafood Origin Working Group Paper: Consumer access to seafood origin information in the foodservices sector](#), June 2017, p. 11.

¹² Northern Territory Government, *Submission 34*, p. 2; FRDC, *Tracking the impacts on seafood consumption at dining venues arising from the Northern Territory's seafood labelling laws*, June 2011, p. 12.

same product. However, it appears that this confusion is still happening, in part due to the voluntary nature of the standard.¹³

- 4.19 Dr Patrick Hone, Managing Director of the FRDC, explained that there has not been interest from governments to adopt the Fish Names Standard into either fisheries management legislation or the Food Standards Code, and that there are reasons businesses may choose not to use the standard names:

... there are commercial gains, let's say, from misleading the public on what a true name is. It's quite true that, if you're eating King George whiting, you're probably willing to pay more, but, if you're eating just ordinary whiting, you might be substituting a lesser whiting to get that price.¹⁴

- 4.20 For this reason, the FRDC recommended that Standard 2.2.3 of the Food Standards Code be amended to make use of the Fish Names Standard mandatory in labelling of fish and fish products, to ensure that it is clear to consumers which species of fish they are purchasing and eating. Introducing such a mandate would not only improve customers' understanding of seafood but may also serve to limit the risks of product substitution and support truth in product naming to assist in the broader traceability of seafood products through import and export markets.¹⁵
- 4.21 However, mandating standard fish names alone would not address all concerns from the seafood industry out about species confusion in the market. This is particularly the case for barramundi.

What is 'barramundi' and is it always Australian?

- 4.22 In Australia, the fish species *Lates calcarifer* is known as barramundi, a word understood to come from an Australian Aboriginal term for 'large scaled fish', and this name is prescribed in the Fish Names Standard. But the species is not only native to Australia, it is also found throughout South East Asia, where it is known to the international community as Asian sea bass.¹⁶
- 4.23 Currently around 60 per cent of all barramundi sold in Australia is imported from overseas. However, research conducted by the Australian Barramundi

¹³ Dr Patrick Hone, Managing Director, FRDC, *Committee Hansard*, Canberra, 2 December 2021, p. 1. See also, Ms Jo-Anne Ruscoe, Chief Executive Officer, Australian Barramundi Farmers Association (ABFA), *Committee Hansard*, Canberra, 9 November 2021, p. 5.

¹⁴ Dr Hone, FRDC, *Committee Hansard*, Canberra, 2 December 2021, p. 3.

¹⁵ FRDC, *Submission 24*, p. 3; Dr Hone, FRDC, *Committee Hansard*, Canberra, 2 December 2021, p. 4.

¹⁶ Mainstream Aquaculture, *Submission 3*, p. [2]; ABFA, *Submission 10*, p. 5.

Farmers Association suggests that, due to its Aboriginal name, consumers associate and expect that all barramundi is Australian.¹⁷

- 4.24 The Australian Barramundi Farmers Association told the committee that this widespread misunderstanding about country of origin, when partnered with the term barramundi being prescribed as the standard name for the species, has provided a competitive advantage to those selling imported fish which is cheaper than Australian-grown and sold elsewhere as Asian sea bass.¹⁸
- 4.25 This competitive advantage is particularly stark in foodservice, where there is no requirement for country of origin labelling at the point of sale. One producer of barramundi in Australia, Mainstream Aquaculture, told the committee:
- ... typically, what will happen is there will be a price conscious wholesaler who will buy the more cost-effective imported product and sell into pubs and clubs, other hospitality venues and fish and chip shops. ... there is a direct value transfer—that is, the trade will buy a cheap imported barramundi product and market that at a similar price point to what they would otherwise be able to market Australian product for. The unsuspecting consumer thinks they're buying an iconic Australian fish, but they're actually buying something that may have been grown ... in Vietnam or Taiwan.¹⁹
- 4.26 These concerns from the barramundi sector have led to calls for the name barramundi to be protected and reserved for Australian-grown fish only.²⁰
- 4.27 One recommendation from the Australian Barramundi Farmers Association is to introduce two marketing names standardised for the species under the Fish Names Standard – barramundi for Australian fish and Asian sea bass for imported fish – which would need an exemption from the usual one-name-per-species requirement of the standard.²¹

¹⁷ ABFA *Submission 10*, p. 5. See also, Mr Luke Bowen, Deputy Chief Executive Officer, Department of Industry, Tourism and Trade, Northern Territory, *Committee Hansard*, Darwin, 26 July 2021, p. 10.

¹⁸ ABFA *Submission 10*, p. 5. See also, Ms Ruscoe, ABFA, *Committee Hansard*, Canberra, 9 November 2021, pages 4 and 5.

¹⁹ Mr Boris Musa, Managing Director and Chief Executive Officer, MainStream Aquaculture, *Committee Hansard*, Canberra, 9 November 2021, p. 11.

²⁰ ABFA *Submission 10*, p. 6; Ridley Corporation, *Submission 5*, p. [6]. See also, Northern Territory Government, *Submission 34*, p. 3.

²¹ Ms Ruscoe, ABFA, *Committee Hansard*, Canberra, 9 November 2021, p. 5.

- 4.28 The FRDC informed the committee that a similar distinction already exists for the species known as Rainbow Trout (when reared in fresh water) and Ocean Trout (when reared in salt water).²² Another example of a naming exemption under the standard is usage of the name ‘flake’, which is assigned to two species of gummy shark but refers only to the flesh product and not the animal itself.²³
- 4.29 The other recommendation was to either register a certified trademark for the term ‘Australian Barramundi’ or a geographical indication trademark (used for products like champagne) so that ‘barramundi’ can only be used by Australian producers of farmed and wild-caught barramundi.²⁴ However, it is unclear who would be responsible for pursuing and maintaining such a registration, particularly as costs to defend the use of a geographical indicator may be beyond the capacity of any industry body.²⁵
- 4.30 For this reason, the Australian Barramundi Farmers Association indicated that the most straightforward way to address concerns about the distinction between Australian and imported barramundi would be to mandate country of origin information labelling in foodservice.²⁶

Ongoing calls for country of origin labelling reform

- 4.31 With close to 70 per cent of all seafood currently consumed in Australian foodservice coming from imported sources, there is ongoing concern from the seafood industry that consumers incorrectly assume most seafood sold in these settings is of Australian origin.²⁷
- 4.32 The Northern Territory Seafood Council told the committee:

As you can understand, when you see something like barramundi or a fish species that is very well-known for the region that you're in—such as, if you're in South Australia and there was whiting on the menu or if you were in

²² Dr Hone, FRDC, *Committee Hansard*, Canberra, 2 December 2021, p. 2.

²³ Fish Names Committee, [Fish Name Fact File No 2: Gummy Sharks and Flake](#).

²⁴ ABFA, *Submission 10*, pages 6 and 7.

²⁵ Mr Ian Curnow, Executive Director, Fisheries Division, Department of Industry, Tourism and Trade, Northern Territory, *Committee Hansard*, Darwin, 26 July 2021, p. 11; Dr Hone, FRDC, *Committee Hansard*, Canberra, 2 December 2021, p. 4; ABFA *Submission 10*, p. 6.

²⁶ Ms Ruscoe, ABFA, *Committee Hansard*, Canberra, 9 November 2021, p. 3.

²⁷ Department of Industry, Innovation and Science, [Seafood Origin Working Group Paper: Consumer access to seafood origin information in the foodservices sector](#), June 2017, pages 5-6; Seafood Industry Australia (SIA), *Submission 22*, p. 9.

Tasmania and flathead was on the menu—you'd fully expect that to be a local product.²⁸

- 4.33 Witnesses and submitters to the current inquiry expressed the view that the exemption of the Country of Origin Standard from foodservice settings is contributing to continued consumer confusion about seafood origin, which is easily exploited by businesses pricing cheaper imported products as if they were premium Australian products.²⁹
- 4.34 Several industry groups told the committee that introducing mandatory country of origin labelling in foodservice across the country would allow Australian seafood products to be better differentiated from imported products. This distinction could lead to significant growth for the Australian seafood industry, as surveys suggest that consumers are willing to pay a premium for products that they know are Australian.³⁰
- 4.35 For example, the Australian Barramundi Farmers Association estimates that the increased market share of Australian seafood from the introduction of mandatory country of origin labelling could lead to an increase in economic value of \$100 million and additional 250 direct and 1000 indirect jobs in regional areas for the farmed barramundi sector alone, and up to \$2 billion in economic value for the broader Australian seafood industry.³¹

Options for labelling

- 4.36 Although there was significant support for mandatory country of origin labelling of seafood in foodservice from witnesses and submitters to this inquiry, there was no clear consensus on how it should be implemented.

²⁸ Mrs Katherine Winchester, Chief Executive Officer, Northern Territory Seafood Council Inc, *Committee Hansard*, Canberra, 12 August 2021, p. 1.

²⁹ Ms Veronica Papacosta, Chief Executive Officer, SIA, *Committee Hansard*, Canberra, 26 August 2021, p. 2; Mr Robert Richards, Managing Director and Board Chairperson, Humpty Doo Barramundi, *Committee Hansard*, Darwin, 26 July 2021, pages 3 and 5; Mrs Kim Hooper, Executive Officer, Australian Prawn Farmers Association, *Committee Hansard*, Canberra, 8 November 2021, p. 4; Aquaculture Council of Western Australia, *Submission 2*, p. 3 ABFA *Submission 10*, p. 6.

³⁰ See, for example, Australian Prawn Farmers Association, *Submission 6*, p. 7; Mr R Richards, Humpty Doo Barramundi, *Committee Hansard*, Darwin, 26 July 2021, p. 3; Mainstream Aquaculture, *Submission 3*; Mrs Winchester, Northern Territory Seafood Council Inc, *Committee Hansard*, Canberra, 12 August 2021, p. 2.

³¹ ABFA, *Submission 10*, pages 6 and 7.

- 4.37 One labelling approach proposed was an extension of the Northern Territory model, which would require that any imported product be identified on a menu, such as using a small 'i' to indicate 'imported'.³²
- 4.38 Alternatively, Seafood Industry Australia (SIA) submitted that a 'if it's not labelled, it's not Aussie' approach would provide transparency to consumers without placing an unnecessary burden on foodservice settings unlikely to be using Australian seafood, such as hospitals, prisons and aged care facilities.³³ Under such a model, Australian seafood would be required to be clearly labelled by country, region or brand (e.g. Australian Barramundi, Northern Territory Barramundi, Spencer Gulf King Prawns) and imported seafood would be labelled as imported or not labelled at all.³⁴

Previous inquiries into the labelling of seafood products

- 4.39 Before the introduction of the Country of Origin Standard under the Australian Consumer Law, the labelling of seafood products was examined in several inquiries by the Productivity Commission, independent reviewers, and parliamentary committees, including:
- *Labelling Logic: Review of Food Labelling Law and Policy*, an independent review of national food labelling law and policy, conducted by Dr Neil Blewett in 2011 (Blewett Review)
 - an inquiry into the requirements for labelling of seafood and seafood products by the Senate Rural and Regional Affairs and Transport References Committee in 2014
 - an inquiry into country of origin labelling for food by the House of Representatives Standing Committee on Agriculture and Industry (the predecessor to the current committee), also in 2014
 - an inquiry into a private Senator's bill, the Food Standards Amendment (Fish Labelling) Bill 2015, by the Senate Rural and Regional Affairs and Transport Legislation Committee in 2015
 - an inquiry into opportunities for expanding aquaculture in Northern Australia by the Joint Select Committee on Northern Australia in 2016

³² Ms Ruscoe, ABFA, *Committee Hansard*, Canberra, 9 November 2021, p. 3.

³³ SIA, *Submission 22*, p. 9.

³⁴ SIA, [Evaluation of Country of Origin Labelling for Food submission](#), September 2020.

- *Inquiry into Regulation of Australian Marine Fisheries and Aquaculture Sectors* by the Productivity Commission, also in 2016.

- 4.40 Across these inquiries, views were mixed as to whether mandatory country of origin labelling should be introduced for seafood products in foodservice, and whether the potential economic impact and regulatory compliance burden, particularly on the small and family-run businesses which make up much of the foodservice sector, to maintain up-to-date country of origin information on menus would outweigh any benefit to the seafood sector and consumers more broadly.³⁵
- 4.41 There was also some concern that any regulatory change would require the agreement of all states and territories and that without a public policy reason for country of origin labelling such as food safety or consumer protection, which are already addressed by the Food Standards Code and Australian Consumer Law, this agreement would be very hard to achieve.³⁶
- 4.42 While each of the parliamentary committees ultimately recommended the consideration or introduction of country of origin labelling for seafood in foodservice, both the Blewitt Review and the 2016 review by the Productivity Commission recommended against such an action.³⁷
- 4.43 During debate about the introduction of the new retail country of origin labelling requirements in 2016, the Commonwealth Government committed to undertake a review to consider options for improving consumer access to seafood origin information in foodservice in light of the ongoing concerns raised through these reviews and inquiries.³⁸

³⁵ See, for example, Senate Rural and Regional Affairs References Committee, *Current requirements for labelling of seafood and seafood products*, December 2014, pages 25 and 26. See also, Department of Industry, Innovation and Science, [Seafood Origin Working Group Paper: Consumer access to seafood origin information in the foodservices sector](#), June 2017, p. 14.

³⁶ Productivity Commission, *Marine Fisheries and Aquaculture*, Final Report, 2016, p. 28; *Labelling Logic: Review of Food Labelling Law and Policy*, 2011, pages 107 and 108; Senate Rural and Regional Affairs References Committee, *Current requirements for labelling of seafood and seafood products*, December 2014, pages 25 and 26.

³⁷ Department of Industry, Innovation and Science, [Seafood Origin Working Group Paper: Consumer access to seafood origin information in the foodservices sector](#), June 2017, p. 3.

³⁸ Department of Industry, Science, Energy and Resources (DISER), [Ministerial statement: Consumer access to seafood origin information in foodservice](#), December 2020.

Consultation on consumer access to seafood origin information

4.44 In 2017, the Commonwealth Government commenced a consultation process with stakeholders across both the seafood and hospitality industries to consider options for improving seafood origin information in the foodservices sector, the object of which was to:

... ascertain whether there was widespread evidence of consumers being unable to obtain seafood origin information in food service, and whether industry had pursued non-regulatory, industry-led initiatives.³⁹

4.45 The consultation process involved seeking submissions from stakeholders (including food service, seafood producers, small business, and consumer groups), undertaking an extensive review of materials available from the previous inquiries, considering consumer research and competition issues in seafood and food service, and investigating existing consumer protections.

4.46 The findings were then summarised by the then Department of Industry, Innovation and Science into two reports to support meetings of a Seafood Origin Working Group, convened by then Assistant Minister for Industry, Innovation and Science the Hon Craig Laundry MP, in June and November 2017.⁴⁰

4.47 In December 2020, the then Minister for Industry, Science and Technology, the Hon Karen Andrews, issued a response to the findings of the process undertaken in 2017 and provided an update on the status of the work. In this response, the Minister noted that in the time following the consultation:

- the Australian and New Zealand Ministerial Forum on Food Regulation considered the specific matter of seafood origin labelling in foodservice and had concluded that ‘based on extensive consumer research, there was insufficient evidence to warrant extension of origin labelling to seafood in the foodservice sector’
- the state and territory ministers responsible for fair trading and consumer protection had also reconsidered the matter of seafood origin

³⁹ DISER, [Ministerial statement: Consumer access to seafood origin information in foodservice](#), December 2020.

⁴⁰ Department of Industry, Innovation and Science, [Seafood Origin Working Group Paper: Consumer access to seafood origin information in the foodservices sector](#), June 2017; Department of Industry, Innovation and Science, [Addendum to Seafood Origin Working Group Paper](#), November 2017.

labelling and agreed that there would be no further changes to the Australian Consumer Law on country of origin labelling at that time.⁴¹

4.48 However, the Minister's statement also noted that a broader evaluation of the Country of Origin Standard in 2020–21, aimed to review the standard after its first two years of operation, would:

... present an ideal opportunity to engage with consumers to understand their preferences and desires, and to determine whether any adjustment to the existing [country of origin] arrangements is warranted.⁴²

Evaluation of the Country of Origin Standard

4.49 In July 2020, the Department of Industry, Science, Energy and Resources (DISER) commenced an evaluation of the 2016 country of origin labelling reforms to consider their impact on consumers and businesses.⁴³ The findings of this evaluation are anticipated to be released in the current months.

Committee comment

4.50 The Committee recognises the importance of ensuring that consumers of seafood have ready access to accurate information about the products they are purchasing and eating.

4.51 It is apparent that, for many operators in the aquaculture sector, there could be significant economic advantages in being able to clearly differentiate their premium Australian products from imported products by improving the current regulatory framework for naming and labelling of seafood.

4.52 The Committee agrees with the concerns raised by submitters that while the use of the Australian Fish Names Standard remains voluntary in the Food Standards Code there remains a risk that consumers could be confused or misled about the type of fish they are purchasing.

⁴¹ DISER, [Ministerial statement: Consumer access to seafood origin information in foodservice](#), December 2020.

⁴² DISER, [Ministerial statement: Consumer access to seafood origin information in foodservice](#), December 2020.

⁴³ DISER, *Evaluating country of origin labelling for food reforms*, 31 July 2020, www.industry.gov.au/news/evaluating-country-of-origin-labelling-for-food-reforms, viewed 12 December 2021.

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- 4.53 Mandatory use of the Australian Fish Names Standard for seafood is likely to improve consumers' understanding about what exactly they are eating.
- 4.54 The Australian Fish Names Standard currently provides for one standard name per fish species, except in rare cases.
- 4.55 The Committee recognises that there is a compelling argument for an exception to be made in the case of *Lates calcarifer*, known as barramundi, to address the widespread misunderstanding among consumers that any fish sold as 'barramundi' is Australian. In the absence of mandatory country of origin labelling for seafood products, allowing for a naming distinction between Australian and imported barramundi products within the Australian Fish Names Standard may reduce consumer confusion about the country of origin of the fish.
- 4.56 While the current regulatory framework for food labelling in Australia requires information about country of origin to be included on the packaging of all seafood sold in retail settings, consumers enjoying seafood at cafes, restaurants and local fish and chips shops aren't provided with this same level of information about the origin of their meal.
- 4.57 Despite repeated calls from the seafood industry for change, decision-makers over the past decade have continued to exempt foodservice settings from the mandatory country of origin labelling regulations.
- 4.58 The Committee notes that seafood labelling is one of the matters under consideration by the DISER, in their evaluation of the 2016 country of origin labelling reforms.
- 4.59 The Committee recognises that there is a trade-off to be made between the costs and difficulty associated with mandatory country of origin labelling for the foodservice industry and the benefits of such labelling for both consumers and the seafood industry.
- 4.60 It seems that a reasonable compromise must be found between the needs of the foodservice and seafood industries. Above all, however, consumers have a right to know where their seafood is coming from.
- 4.61 The Committee noted with interest the suggestion from SIA that labelling changes for foodservice could be implemented in such a way as to not disadvantage sectors unlikely to be using premium Australian products, such as hospitals, prisons and aged care facilities, which would significantly reduce the burden of introducing labelling.
- 4.62 The example of the Northern Territory has also shown that country of origin labelling in foodservice does not have to be onerous to businesses and can be

as simple as noting on a menu or sign when a product is imported. This model, which has been in place in the territory for over 12 years, seems to be working well and should be considered on a national level.

Recommendation 7

- 4.63 The Committee recommends that Food Standards Australia New Zealand consider mandating the use of the Australian Fish Names Standard under Food Standards Code Standard 2.2.3 for fish and fish products in Australia.**

Recommendation 8

- 4.64 The Committee recommends that the Fisheries Research and Development Corporation work with barramundi industry groups to support an application to assign two standard names for *Lates calcarifer* under the Australian Fish Names Standard: 'barramundi' for fish grown or caught in Australia and 'Asian sea bass' for any imported products.**

Recommendation 9

- 4.65 The Committee recommends that the Commonwealth Government, in conjunction with the states and territories, consider changes to the Country of Origin Food Labelling Information Standard 2016 to require labelling of imported seafood products in foodservice settings, such as restaurants, cafes and fish-and-chip shops, in line with current regulatory requirements in the Northern Territory.**

5. Regulatory frameworks and public policy

- 5.1 As outlined in Chapter 1 of this report, aquaculture in Australia is governed through a wide range of legislation and regulatory frameworks, largely at a state and territory level. A consistent theme throughout this inquiry was the need to ensure that these frameworks are fit for purpose and support the future growth of the industry, while still providing the necessary checks and balances for a safe and sustainable sector.
- 5.2 Many witnesses and submitters described to the Committee how complex, inconsistent and overlapping regulation had affected the ability of the aquaculture industry to start new ventures, expand businesses or undertake research and development in emerging sectors and technologies. There are also concerns that, in such a fast-growing sector, there is a risk of the regulatory environment lagging behind the pace of industry development.¹
- 5.3 These issues about regulation in aquaculture are long-standing and are well understood by the Commonwealth, state and Northern Territory governments. The response of governments to these and other concerns raised through this inquiry underpin much of the National Aquaculture Strategy, designed to support the ongoing growth of the sector.²

¹ See for example, Aquaculture Council of Western Australia (ACWA), *Submission 2*, p. 4; Mainstream Aquaculture, *Submission 3*, p. 1; Australian Barramundi Farmers Association (ABFA), *Submission 10*, p. 8; Commonwealth Fisheries Association Inc (CFA), *Submission 38*, p. [3]; NPF Industry Pty Ltd, *Submission 39*, p. 2.

² Department of Agriculture and Water Resources (DAWR), *National Aquaculture Strategy*, Canberra, September 2017, p. 6.

- 5.4 This chapter outlines a range of issues raised about the regulatory frameworks and policy for aquaculture in Australia and proposes solutions to better support innovation, mitigate risks, and invest in long-term growth of the sector.

Regulation for a growing industry

- 5.5 Most regulatory concerns raised during the inquiry were not unique to any one region of Australia and were shared by operators and industry groups across the spectrum of aquaculture activities, but there were also a small number of more state-specific issues. These concerns, and some of the steps already place to address them, are outlined below.

Delays, duplication and inconsistencies in regulatory processes

- 5.6 The Committee heard that a major point of frustration for many aquaculture operators in Australia is the length of time taken to complete the regulatory processes required for essential permits, licenses and leases needed to conduct operations, as well as applications for new or expanded facilities.³
- 5.7 Ridley Corporation submitted that, in order to allow the industry to grow, there needs to be consistent regulation of applications, with clear timeframes for processing and approval:

A clear process, and commitment to assessment in specified timeframes for both expansions and new farm submissions, would assist industry in the planning and pre-investment necessary to scale up the supply chain to match increased production.⁴

- 5.8 In many jurisdictions, there is often duplication in application assessments for new aquaculture developments between state departments and agencies, particularly where these agencies have overlapping responsibilities for permitting different aspects of the land and/or water use. Some states have adopted approaches to try to reduce the delays caused by this duplication.
- 5.9 In South Australia, work is underway to reduce duplication of development approvals and assessments between state government departments, with a greater focus on establishing the South Australian Department of Primary

³ See, for example, Fisheries Research and Development Corporation (FRDC), *Submission 24*, p. 17; Mainstream Aquaculture, *Submission 3*, p. 1; ABFA, *Submission 10*, p. 8; Blue Economy Cooperative Research Centre (Blue Economy CRC), *Submission 9*, p. [7]; Petuna Aquaculture, *Submission 33*, pages 2-3.

⁴ Ridley Corporation Limited, *Submission 5*, pages 4-5.

Industries and Regions as a 'one-stop-shop' for all aquaculture administration in the state.⁵

- 5.10 The Queensland Government has also undertaken work to streamline some approval processes and reduce red tape, with Fisheries Queensland offering an advice service for aquaculture licensing and approvals and coordinating much of the development application process in the state.⁶ A 2011 Conservation Agreement between the state and the Commonwealth also streamlines the regulatory process for applications for aquaculture activities in the Great Sandy region, allowing those applicants to forgo a separate environmental application and assessment under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.⁷
- 5.11 In the Northern Territory, there is an interest in adopting a similar one-stop-shop model to South Australia.⁸ However, as the Northern Territory Seafood Council explained to the Committee, the size of the aquaculture industry in the territory to date has not warranted the costs in making the changes to necessary to streamline regulatory processes.⁹
- 5.12 In Tasmania, salmon growers also advocated for the introduction of a more efficient, one-stop-shop or coordinator for salmon regulation. But this might be problematic for major salmon companies in Tasmania which have vertically integrated businesses working across farming, production, packing and sales. Such a model would likely need to encompass not only state aquaculture regulations but also local and Commonwealth government regulation of other aspects of the production chain.¹⁰

⁵ South Australian Government, Department of Primary Industries and Regions, *Submission 17*, p. 5.

⁶ FRDC, *Submission 24*, p. 12; Queensland Government, *Aquaculture licensing and approvals*, www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/aquaculture/policies-licences-fees/licensing-approvals, visited 20 December 2021.

⁷ Queensland Government, Department of Agriculture and Fisheries, *Submission 35*, p. 14.

⁸ Mrs Katherine Winchester, Chief Executive Officer, Northern Territory Seafood Council Inc, *Committee Hansard*, Canberra, 12 August 2021, p. 3. See also, Northern Territory Government, *Submission 34*, p. 3.

⁹ Mrs Winchester, Northern Territory Seafood Council Inc, *Committee Hansard*, Canberra, 12 August 2021, p. 3.

¹⁰ Tasmanian Salmonid Growers Association (TSGA), *Submission 37*, p. 4.

5.13 Inconsistencies in regulatory frameworks between jurisdictions also pose challenges to operators who work across multiple states.¹¹ The Institute of Marine and Antarctic Studies at the University of Tasmania submitted that:

Ensuring state-by-state consistency as well as simplicity and clarity in leasing and licensing processes is likely to lower the administrative burden for companies seeking to operate across state jurisdictions.¹²

5.14 The National Aquaculture Strategy, in its discussion of regulatory frameworks, likewise highlights that variations in approaches to regulating licenses, leases and environmental requirements between jurisdictions can affect operators' ability to expand or invest in new ventures. To address this issue, it includes an action item for all jurisdictions, through the Aquaculture Committee of the Australian Fisheries Management Forum, to 'continue to discuss an approach to aquaculture regulation with the aim of promoting best regulation and planning practice nationally'.¹³

Use of designated aquaculture zones

5.15 Evidence provided to this inquiry suggested that much of the regulatory burden currently faced by the aquaculture industry could be reduced through the increased use of aquaculture zones. These are areas identified and designated by state governments, through marine spatial planning activities and industry consultation, specifically for the purpose of aquaculture production. Approval processes for any activities conducted in those zones could be streamlined.

5.16 Greater use of spatial planning and related policies to encourage activities in identified aquaculture zones was highlighted by the Productivity Commission in 2016 as the one key improvement which could be made to the regulatory environment for aquaculture.¹⁴ Furthermore, the National Aquaculture Strategy already includes an action for jurisdictions, in consultation with industry, to investigate potential areas for designated

¹¹ Mr David Wood, CEO, Yumbah Aquaculture Ltd, *Committee Hansard*, Canberra, 26 November 2021, p. 2.

¹² University of Tasmania (UTAS), Institute of Marine and Antarctic Studies (IMAS), *Submission 13*, p. 6.

¹³ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 10.

¹⁴ Productivity Commission, *Marine Fisheries and Aquaculture*, Final Report, 2016, pages 29 to 31.

aquaculture zones and establish streamlined approval processes for new aquaculture development in these areas.¹⁵

5.17 The Fisheries Research and Development Corporation (FRDC) outlined that there are already aquaculture zones in place in several jurisdictions, including:

- South Australia, which has ten designated aquaculture development areas, each with requirements for which species can be grown and how much of a particular type of aquaculture development can occur within the zone boundaries, and has recently called for developments across other growing areas
- Tasmania, which has 14 Marine Farming Development Plans setting out areas for aquaculture, specifying the types of marine farming for the area and containing management controls developed to mitigate and manage potential impacts of farming
- Queensland, which has six land-based aquaculture development areas and another under further consideration, intended to promote a sustainable aquaculture industry
- Western Australia, which has three aquaculture development areas: the Kimberley, for marine fish; the Mid-West for marine finfish; and Albany for marine shellfish such as edible oysters and mussels.¹⁶

5.18 Seafood Industry Australia (SIA) expressed the view that these zones, particularly in South Australia and Western Australia:

... have proved beneficial in streamlining consultation with all stakeholders and extending through to the environmental and planning approvals process. Increased efficiency in securing approvals decreases the perceived risk as assessed by financial institutions when assessing an aquaculture operation's application for capital funding.¹⁷

5.19 The Northern Territory Seafood Council noted in its submission that the Northern Territory Government has yet to develop any dedicated aquaculture zones, but there is opportunity to do so through the development of new Sustainable Development Precincts. The council emphasised that any aquaculture zones should be accompanied by clear and streamlined approval processes:

¹⁵ DAWR, *National Aquaculture Strategy*, Canberra, September 2017, p. 10.

¹⁶ FRDC, *Submission 24*, pages 12 and 13.

¹⁷ Seafood Industry Australia (SIA), *Submission 22*, p. 10.

It is important that defined processes and criteria are established, along with defined time frames to provide certainty and attract investment from industry in new or expanded ventures.¹⁸

- 5.20 The Australian Barramundi Farmers Association warned the Committee that designated aquaculture zones will make little difference to supporting industry growth if they are not adequately supported by these kinds of streamlined paths for approval and or located within optimal growing zones for relevant species.¹⁹
- 5.21 Designated aquaculture zones may also assist to address community concerns about new developments. Submitters from Tasmania expressed the view that some concerns about the environmental impact of salmon aquaculture in that state could be addressed through further and improved marine spatial planning and identification of appropriate sites for future farming.²⁰ The Tasmania Independent Science Council (TISC) submitted that:

Marine spatial planning (MSP), if it has been done as a precursor, provides an effective and comprehensive tool to evaluating aquaculture sites in coastal waters ... it also provides a justifiable and evidence-based mechanism for the local community and the wider population.²¹

Aquaculture in Commonwealth Waters

- 5.22 As discussed in Chapter 2, there is significant opportunity for Australian aquaculture to expand into offshore operations in the coming years. However, as aquaculture to date has been conducted onshore and in coastal waters where regulation is a matter for states and territories, the current framework does not yet provide an avenue for these new operations to occur in Commonwealth waters.
- 5.23 Submitters stressed the importance of having a clear regulatory framework in place to underpin research, development, and expansion of the aquaculture industry into Commonwealth waters, and that this would

¹⁸ Northern Territory Seafood Council, *Submission 12*, p. 3.

¹⁹ ABFA, *Submission 10*, p. 9.

²⁰ The Australian Institute Tasmania, *Submission 27*, p. 6; Tasmania Independent Science Council (TISC), *Submission 23*, p. 2. See also, The Nature Conservancy Australia, *Submission 40*, p. 4.

²¹ TISC, *Submission 23*, p. 2.

reduce uncertainty and risk for stakeholders wishing to invest in offshore operations.²²

- 5.24 The Blue Economy Cooperative Research Centre (Blue Economy CRC) and the Institute for Marine and Antarctic Studies at the University of Tasmania both submitted that the immediate challenges of regulating offshore aquaculture could be addressed by using the framework provided in the Offshore Constitutional Settlement (OCS), a series of complementary Commonwealth and state legislation which establishes who has jurisdiction over what activities in Australian waters.²³
- 5.25 Under the OCS, states and territories are largely responsible for regulating activities and developments in waters up to three nautical miles from the coast, while the Commonwealth is responsible beyond that point and to the edge of the Economic Exclusion Zone at 200 nautical miles. The OCS includes arrangements between states and the Commonwealth to allow certain marine activities in Commonwealth waters, such as mining and fisheries, to be regulated by the nearby state or territory.²⁴
- 5.26 Blue Economy CRC is leading work to create a framework for establishing new agreed arrangements for 'Blue Economy' aquaculture zones in Commonwealth waters under the OCS. These zones:
- ... could provide 'investment ready' platforms with strategic environmental approvals and management policies already in place, allowing both commercial and R&D activities to be initiated more seamlessly and with less need for lengthy, complex and expensive approval processes.²⁵
- 5.27 On 27 September 2021, a memorandum of understanding (MOU) was announced between the Commonwealth and Tasmanian governments to allow for a trial by Blue Economy CRC to examine the economic, environmental and operational feasibility of offshore aquaculture, consistent with both the National Aquaculture Strategy and the Tasmanian Government's 10-year Salmon Plan. Under this MOU, both governments will, as a priority, amend relevant legislation to enable aquaculture research

²² FRDC, *Submission 24*, p. 13; UTAS, IMAS, *Submission 13*, p. 7; CFA *Submission 38*, p. 3; NPF Industry Pty Ltd, *Submission 39*, p. 2; Tassal Group, *Submission 44*, p. 3.

²³ Blue Economy CRC, *Submission 9*, p. 8; UTAS, IMAS, *Submission 13*, p. 7.

²⁴ Blue Economy CRC, *Submission 9*, p. 8; UTAS, IMAS, *Submission 13*, p. 7; CFA, *Submission 38*, p. 5.

²⁵ Blue Economy CRC, *Submission 9*, p. 9; Dr John Whittington, Chief Executive Officer, Blue Economy CRC, *Committee Hansard*, Canberra, 21 October 2021, p. 2.

in Commonwealth waters, adjoining Tasmanian State waters, to be managed under existing Tasmanian fisheries and aquaculture legislation.²⁶

- 5.28 The Department of Agriculture, Water and the Environment (DAWE) informed the Committee that there is still a range of work to be done around establishing regulatory frameworks for aquaculture in Commonwealth waters, including ensuring that placement of activities doesn't impact on other relevant industries such as fishing, oil and gas, all of which is part of the purpose of this Tasmanian trial.²⁷

Access to veterinary medicines

- 5.29 Another general regulatory issue raised through the inquiry was in relation to access to agricultural and veterinary chemicals (agvet chemicals) for use in aquaculture activities.
- 5.30 Several submitters noted that, under the current regulatory scheme, there are few registered agvet chemicals available for use in aquaculture and the currently regulatory processes are inefficient and unsuited for small industries such as aquaculture which use only low volumes of chemicals.²⁸
- 5.31 The current frameworks for registration and management of agvet chemicals are managed through the National Registration Scheme for Agricultural and Veterinary Chemicals by the Australian Pesticides and Veterinary Medicines Authority, in collaboration with state, territory and other Commonwealth government agencies. The Commonwealth Government recently commissioned a review of this regulatory framework to ensure that it is contemporary and fit for purpose. The final report of that review was released in July 2021, making a range of recommendations for changes to the

²⁶ [Memorandum of Understanding between the Commonwealth of Australia and the Crown in Right of Tasmania to support the implementation of the National Aquaculture Strategy enabling off-shore aquaculture in adjoining Commonwealth waters](#), 27 September 2021. See also, Dr Whittington, Blue Economy CRC, *Committee Hansard*, Canberra, 21 October 2021, p. 2.

²⁷ Ms Emma Campbell, First Assistant Secretary, AgVet Chemicals, Fisheries, Forestry and Engagement Division, Department of Agriculture, Water and the Environment, *Committee Hansard*, Canberra, 25 November 2021, p. 5.

²⁸ Australian Prawn Farmers Association (APFA), *Submission 6*, p. 8; FDRC, *Submission 24*, pages 19 to 20; Queensland Government, *Submission 35*, p. 15. See also, Huon Aquaculture, *Submission 31*, p. 3; TSGA, *Submission 37*, p. 3.

regulatory framework to streamline and improve access to safe and effective products for minor Australian industries, such as aquaculture.²⁹

5.32 Submitters to the current inquiry supported these recommendations which would improve access to agvet chemicals for aquaculture,³⁰ and a Government Response to the review is expected in due course.

5.33 The DAWE also informed the Committee that the Commonwealth Government had invested over \$11 million in Rural Research and Development Corporations, including \$300,000 for the FRDC, specifically for improving national access to minor use agvet chemicals as well as products to treat infections and parasites in aquaculture species.³¹

State-specific regulatory concerns

5.34 The Committee also received evidence of some state-specific regulatory concerns from witnesses and submitters.

Environmental requirements in Queensland

5.35 Several groups with aquaculture interests in Queensland raised concerns that the current environmental framework in that state unfairly penalises aquaculture operators through sediment and nutrient emission standards, particularly in the Great Barrier Reef catchment area.³²

5.36 The Queensland Government submitted that the ‘no residual release’ standard for activities in reef catchments, in place from 1 July 2021, is intended to ensure that new developments in the region do not undo progress on reef water quality targets, noting that:

Poor water quality as a result of catchment run-off is the major cause of the current poor state of many of the coastal and marine ecosystems of the Reef.³³

5.37 However, Mainstream Aquaculture told the committee that the new standards which aquaculture operators are required to meet:

²⁹ Department of Agriculture, Water and the Environment, *Final Report of the Independent Review of the Pesticides and Veterinary Medicines Regulatory System in Australia*, 2021. See also, Department of Agriculture, Water and the Environment (DAWE), *Submission 25*, pages 9-10.

³⁰ APFA, *Submission 6*, p. 8; ABFA, *Submission 10*, p. 9; ACWA, *Submission 2*, pages 3-4.

³¹ DAWE, *Submission 25*, p. 10.

³² Mainstream Aquaculture, *Submission 3*, pages 1 and 2; Ridley Corporation Limited, *Submission 5*, p. [4]; APFA, *Submission 6*, p. 6; ABFA, *Submission 10*, p. 8; SIA, *Submission 22*, p. 13.

³³ Queensland Government, *Submission 35*, pages 8-9.

... do not appear to be science based and are applied without a comprehensive understanding of aquaculture practices and impacts. ... Meanwhile, large non-point source polluters such as cropping and pastoral operators are not regulated in the same manner. This situation has restricted the growth of aquaculture and promoted the expansion of higher polluting industries in far north Queensland.³⁴

5.38 Ridley Corporation and the Australian Prawn Farmers Association, among others, noted that there have been over 40 independent peer reviewed papers to date finding that aquaculture has no impact on the reef and that output of aquaculture farms is assimilated into the environment and does not negatively impact the Great Barrier Reef Marine Park.³⁵

5.39 The Australian Barramundi Farmers Association also explained that, at certain times of the year, discharge from barramundi can be of demonstratively better quality than the intake water used for the ponds:

Therefore, our members have argued that the net load in intake water should be deducted from the net load released in the receiving environment. To do otherwise is to penalise our members for environmental services.³⁶

5.40 For these reasons, industry groups have called for the environmental regulation in Queensland to be reviewed to allow nutrient and sediment loads to be based on residual nutrients after assimilation into the receiving environment.³⁷

Regulatory frameworks for aquaculture in Tasmania

5.41 There are long-standing concerns about the regulatory framework in Tasmania for aquaculture development planning, approval and monitoring, particularly relating to the salmon sector.³⁸

5.42 The Committee received several submissions from community and environmental groups which argued that the Tasmanian regulatory framework for aquaculture is insufficiently transparent, appears to be discretionary and subject to undue influence from industry, is poorly

³⁴ Mainstream Aquaculture, *Submission 3*, p. 2.

³⁵ Ridley Corporation Limited, *Submission 5*, p. 4; APFA, *Submission 6*, p. 6.

³⁶ ABFA, *Submission 10*, p. 8.

³⁷ SIA, *Submission 22*, p. 13; ABFA, *Submission 10*, p. 8.

³⁸ As discussed in Chapter 3, there is a view in the Tasmanian community that the salmon industry does not comply with environmental regulation.

enforced by government, and requires significant overhaul.³⁹ NWTAS for Clean Oceans reported that, based on what information is available to community groups such as theirs, it appears that:

... current environmental monitoring, interpretation, and planning of regulatory mechanisms is ad hoc and designed to suit the industry. This is leading a cynical public to believe there is political interference in the salmon industry in Tasmania.⁴⁰

5.43 The Tasmanian Alliance for Marine Protection and Neighbours of Fish Farming also submitted that, while the salmon industry claims to be meeting regulatory standards, ongoing issues such as mortalities, marine debris and marine life impact suggest that either there are problems with the enforcement of regulations by government, or the regulations themselves are inadequate to address these risks.⁴¹

5.44 Academics and research groups raised similar concerns, expressing opinions that significant work needs to be undertaken to improve the broader governance of aquaculture in Tasmania and increase transparency and accountability around decision-making, especially for decisions relating to new marine farm developments and environmental approvals.⁴² For example, the Australia Institute told the Committee that:

The current legislative regime lacks clear and specific criteria to guide decisions regarding salmon farm expansion. ... There is no objective guidance for determining whether [environmental] impacts are acceptable, what level of scientific certainty is required, and the extent to which economic or social issues are to be considered. The result is that decision-making is discretionary and lacking transparency and accountability.⁴³

³⁹ See, for example, NWTAS for Clean Oceans, *Submission 21*; Ms Austra Maddox, *Submission 29*; Tasmanian Alliance for Marine Protection (TAMP) and Neighbours of Fish Farming (NOFF), *Submission 19*.

⁴⁰ NWTAS for Clean Oceans, *Submission 21*, p. 5.

⁴¹ TAMP and NOFF, *Submission 19*, pages 3 and 4.

⁴² See, for example, Dr Lisa-Ann Gershwin and Dr Dain Bowell, *Submission 28*; TISC, *Submission 23*; The Australia Institute, Tasmania, *Submission 27*; Institute for Marine and Antarctic Studies, UTAS, IMAS, *Submission 13*.

⁴³ The Australia Institute, Tasmania, *Submission 27*, pages 2 and 3.

- 5.45 The TISC shared this view, recommending in its submission that a ‘truly independent regulator with transparent processes’ be established to ‘create a sustainable industry and restore social license’.⁴⁴
- 5.46 In September 2021, the Tasmanian Government announced that a new 10-year Salmon Plan, designed to support a sustainable salmon industry, will begin on 1 January 2023. Under this plan, the Tasmanian Government has committed to continuous improvement in regulation and transparency, and to adopting a new model of independent regulation. As part of this, the Environment Protection Authority – the agency responsible for assessing the environmental impacts of new developments and conducting environmental monitoring in the state – was formally separated from the Department of Natural Resources and Environment Tasmania into a stand-alone independent authority as of 1 December 2021.⁴⁵
- 5.47 Consultation on the draft 10-year Salmon Plan and its commitments is due to occur over the coming months with the final plan expected to be released in the final quarter of 2022, ahead of the January 2023 commencement date.⁴⁶

Checking in with the National Aquaculture Strategy

- 5.48 As outlined in Chapter 1, the National Aquaculture Strategy includes eight priority areas aimed at supporting the growth of a strong, competitive, resilient, profitable, and ecologically sustainable aquaculture industry. Each of the priority areas include actions with clear statements of intent from the Commonwealth, state and Northern Territory governments to address barriers, realise opportunities and achieve the goal of industry growth to a value \$2 billion per year by 2027.
- 5.49 The Committee heard that many of the opportunities and barriers for the expansion of the Australian aquaculture sector raised in evidence across the current inquiry are identified in these priorities. The strategy was developed following in-depth consultation with industry, operators and representatives

⁴⁴ TISC, *Submission 23*, p. 5.

⁴⁵ Department of Natural Resources and Environment Tasmania (DNRET), *Salmon Plan*, October 2021, nre.tas.gov.au/sea-fishing-aquaculture/marine-farming-aquaculture/salmon-farming/salmon-industry-growth-plan, visited 20 December 2021; Environment Protection Authority Tasmania, *A new era begins for the EPA today*, 1 December 2021, epa.tas.gov.au/news/a-new-era-begins-for-the-epa-today, viewed 20 December 2021.

⁴⁶ DNRET, *Salmon Plan*, October 2021, nre.tas.gov.au/sea-fishing-aquaculture/marine-farming-aquaculture/salmon-farming/salmon-industry-growth-plan, viewed 20 December 2021.

from all jurisdictions and was designed to reflect the current status and needs of the sector.⁴⁷

5.50 Dr Patrick Hone from the FRDC told the committee:

... the national aquaculture strategy, which we all worked very hard on, really has a great blueprint already. It already has the big elements around biosecurity and all the things that we need to do. The question is: how do we make sure that that aquaculture strategy is delivered?⁴⁸

5.51 Some industry groups expressed a view that, despite clear actions set out in the strategy, there have not been any noticeable changes since its launch.⁴⁹ The Tasmanian Salmonid Growers Association submitted that it:

... would like to see a reset of this plan, with yearly reporting, assigned accountability and better coordination with Governments and industry alike.⁵⁰

5.52 Both the FRDC and SIA recommended that a body be established to take responsibility and manage the implementation of the National Aquaculture Strategy, working with governments and industry to achieve its goals.⁵¹ Seafood Industry Australia suggested that this function could be established as a dedicated team within the DAWE:

A core team must be established, resourced and tasked to drive this strategy to achieve national aquaculture industry development goals. ... this body should combine a balance of expertise and knowledge, and operate as a meaningful collaboration to actively progress the National Aquaculture Strategy through to 2027 together with addressing key recommendations from this inquiry.⁵²

Committee comment

⁴⁷ See, for example, SIA, *Submission 22*, p. 7; Dr Patrick Hone, Managing Director, FRDC, *Committee Hansard*, Canberra, 24 June 2021, p. 2.

⁴⁸ Dr Hone, FRDC, *Committee Hansard*, Canberra, 24 June 2021, p. 2.

⁴⁹ Huon Aquaculture, *Submission 31*, p. 3; TSGA, *Submission 37*, p. 4.

⁵⁰ TSGA, *Submission 37*, p. 5.

⁵¹ FRDC Submission, *Submission 24*, pages 23 and 24; SIA, *Submission 22*, p. 10.

⁵² SIA, *Submission 22*, p. 10.

- 5.53 There is enormous potential to grow Australia's aquaculture industry, both through the expansion of existing operations and the development of entirely new sectors, such as offshore aquaculture. However, if the regulatory framework for aquaculture does not keep pace with changes in the industry and presents an ongoing barrier to operators, there is a risk that this growth could be stifled.
- 5.54 The Committee understands the importance of ensuring the regulatory frameworks for aquaculture do not create unnecessary delays or duplication in processes for applicants seeking to expand or develop their aquaculture operations, as such delays can impact on the ability of operators to secure investments and meet the demands of the supply chain.
- 5.55 There appears to be great support for 'one-stop-shop' models of regulation, where operators interact with a single coordinator or agency in managing applications and approvals for aquaculture operations.
- 5.56 While the Committee is heartened by the National Aquaculture Strategy's commitment for jurisdictions to continue to discuss best regulation and planning practice through the Aquaculture Committee of the Australian Fisheries Management Forum, more still can be done by states and the Northern Territory to reduce the regulatory burden faced by operators.
- 5.57 The Committee is pleased to see commitment from Commonwealth, state and Northern Territory governments under the National Aquaculture Strategy to work together to continue to support the growth of Australia's aquaculture sector across a range of priority areas.
- 5.58 However, the Committee is concerned by the feedback from stakeholders that progress against the actions for these priorities has been hard to measure and that there has been a lack of coordination to ensure that the aims of the strategy are being met.
- 5.59 There appears to be a role for a body to be established to lead the ongoing implementation of the strategy, and the Committee is of the view that such a function could be performed within the DAWet.
- 5.60 The Committee shares the view held by several submitters that many of the issues relating to regulatory barriers for new aquaculture developments could be addressed through the identification of further designated aquaculture zones across the country.
- 5.61 Aquaculture zones, where identified through proper research and consultation, provide an opportunity for jurisdictions to designate areas as specifically suited to aquaculture and provide streamlined approval

processes to operators wishing to conduct specific aquaculture activities within the zones.

- 5.62 The Committee notes that the investigation of potential areas for aquaculture zones is an action of the National Aquaculture Strategy, however it is not clear from the evidence available in this inquiry what progress has been made to meet that action to date.
- 5.63 There is great potential for growth of Australia's aquaculture sector in deep, offshore waters. However, for this potential to be realised, appropriate regulatory frameworks need to be put in place for aquaculture research, development, and operations to be managed in Commonwealth waters.
- 5.64 The Committee is pleased to see the recent MOU between the Commonwealth and Tasmanian governments to support a trial of offshore aquaculture in the Commonwealth waters adjoining Tasmania's coastal waters.
- 5.65 This trial will not only provide an avenue for the critical research and development work required to establish offshore aquaculture in Australia, but will also act as a first step to creating a model of regulation for these activities under the Offshore Constitutional Settlement.
- 5.66 The Committee hopes that this Tasmanian trial of offshore aquaculture will be the first of many such arrangements around the country.
- 5.67 As aquaculture is largely regulated by state legislation, it is unsurprising that some of the issues raised during this inquiry were specific to individual states.
- 5.68 The Committee recognises the concerns held by aquaculture operators in Queensland about the current environmental regulations relating to farm emissions. While it is clear that the intention of the Queensland Government is to protect the water quality of the reef, there is clearly frustration among industry that the requirements introduced this year do not reflect science evidence about waste from aquaculture developments.
- 5.69 Given the evidence presented to this inquiry, the Committee is of the view that these environmental regulations should be reviewed to ensure that an appropriate balance is being struck and that aquaculture operators are not being unfairly targeted by the requirements.
- 5.70 The Committee also recognises the concerns raised by stakeholders in Tasmania about a lack of transparency and independence within the aquaculture regulatory framework in that state, particularly in relation to salmon farming. It is pleased to see that the Tasmanian Government has

taken steps to address some of these concerns through the announcement of a new 10-year Salmon Plan and the separation of the Environment Protection Authority into an independent entity.

- 5.71 The Committee hopes that these steps, along with priority actions for regulation and public perception under the National Aquaculture Strategy, will go some way to improving the community perception of the salmon industry and aquaculture more broadly in Tasmania.
- 5.72 With 2022 marking the half-way point between the publication of the National Aquaculture Strategy in 2017 and its 2027 goal, there is now the perfect opportunity to assess the progress made in the first five years of implementation, with a view to setting targets to be met in the next five years.

Recommendation 10

- 5.73 **The Committee recommends that the Department of Agriculture, Water and the Environment, through the Australian Fisheries Management Forum, support state and Northern Territory government agencies to reduce duplication and streamline regulatory approval processes for aquaculture operations through the introduction of ‘one-stop-shop’ models of regulation management.**

Recommendation 11

- 5.74 **The Committee recommends that the Department of Agriculture, Water and the Environment and the Fisheries Research and Development Corporation provide greater assistance to state and Northern Territory governments, in conjunction with industry, to identify and establish further designated aquaculture zones. These zones should be:**
- **identified using scientific evidence and spatial planning to establish their suitability for aquaculture**
 - **supported by streamlined regulatory approval processes for operators.**

Recommendation 12

- 5.75 **The Committee recommends that the Commonwealth Government, in conjunction with state and Northern Territory governments, investigate further opportunities for expanding arrangements under the Offshore**

Constitutional Settlement to allow for aquaculture activities in Commonwealth waters.

Recommendation 13

5.76 The Committee recommends that the Department of Agriculture, Water and the Environment and the Great Barrier Reef Marine Park Authority work with the Queensland Government to ensure that the current regulatory framework for industry nutrient and sediment emissions in the Great Barrier Reef catchment area reflects latest evidence about the outputs of aquaculture farms and is not unfairly impeding the aquaculture industry's growth.

Recommendation 14

5.77 The Committee recommends that a specialist aquaculture unit is established within the Department of Agriculture, Water and the Environment to support the ongoing implementation of the National Aquaculture Strategy.

Recommendation 15

5.78 The Committee recommends that the Department of Agriculture, Water and the Environment conduct a review of the priorities of the National Aquaculture Strategy to provide an update on progress in the five years since its implementation and ensure that its aims are being met.

Rick Wilson MP

Chair

8 February 2022

A. List of Submissions

- 1 Mr Peter Docking
- 2 Aquaculture Council of Western Australia
- 3 Mainstream Aquaculture Group
- 4 Maxima Pearling Company
- 5 Ridley Corporation Limited
- 6 Australian Prawn Farmers Association Inc
- 7 Sydney Fish Market Pty Ltd
- 8 James Cook University
 - Attachment 1
 - Attachment 2
 - Attachment 3
- 9 Blue Economy Cooperative Research Centre
- 10 Australian Barramundi Farmers Association
 - 10.1 Supplementary to submission 10
- 11 Australian Nuclear Science and Technology Organisation (ANSTO)
- 12 Northern Territory Seafood Council
- 13 University of Tasmania
- 14 Australian Southern Bluefin Tuna Industry Association
- 15 Australian Institute of Marine Science
- 16 Mr Christopher Wells

- 17 South Australian Government
- 18 Tasmanian Government
- 19 Tasmanian Alliance for Marine Protection (TAMP) and Neighbours of Fish Farming (NOFF)
 - Attachment 1
 - Attachment 2
- 20 Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- 21 NWTAS for Clean Oceans
- 22 Seafood Industry Australia Ltd
 - Additional Information 1
- 23 Tasmanian Independent Science Council
 - Attachment 1
 - Attachment 2
- 24 Fisheries Research and Development Corporation
- 25 Department of Agriculture, Water and the Environment
 - Additional Information 1
 - Additional Information 2
 - Additional Information 3
- 26 Australian Sustainable Seaweed Alliance
- 27 The Australia Institute Tasmania
- 28 Dr Lisa-Ann Gershwin and Dr Dain Bolwell
 - Attachment 1
 - Attachment 2
- 29 Ms Austra Maddox
- 30 Mr Dan Monceaux
- 31 Huon Aquaculture Group
 - Attachment 1
- 32 Western Australian Government
 - Attachment 1
 - Attachment 2
- 33 Petuna Group

- 34 Northern Territory Government
- 35 Queensland Government
- 36 Dr Adam Heaton
- 37 Tasmanian Salmonid Growers Association Ltd
- 38 Commonwealth Fisheries Association Inc.
- 39 NPF Industry Pty Ltd
- 40 The Nature Conservancy Australia
- 41 Conservation Council South Australia
- 42 Mr Michael Cornish
- 43 Australian Workers' Union
- 44 Tassal Group

B. List of public hearings and witnesses

Thursday, 27 May 2021

Parliament House, Canberra

Australian Institute of Marine Science

- Dr Richard Brinkman, Research Program Director, Sustainable Coastal Ecosystems and Industries

Thursday, 3 June 2021

Parliament House, Canberra

Department of Agriculture, Water and the Environment

- Ms Emma Campbell, First Assistant Secretary, Agvet Chemicals, Fisheries, Forestry and Engagement Division
- Dr Narelle Clegg, Acting Australian Chief Veterinary Officer
- Mr George Day, First Assistant Secretary, Fisheries Branch
- Ms Rosemary Deininger, Deputy Secretary, Agriculture Policy, Research and Portfolio Strategy
- Dr Ingo Ernst, Acting Assistant Secretary, Animal Health Policy
- Dr Peter Stoutjesdijk, Marine and Aquatic Biosecurity, Animal Biosecurity Branch

Thursday, 17 June 2021

Parliament House, Canberra

CSIRO

- Dr Matthew Cook, Research Director, Livestock and Aquaculture
- Dr Karen Wild-Allen, Principal Research Scientist

Australian Nuclear Science and Technology Organisation

- Ms Catherine Kelleher, Manager, Government Affairs
- Dr Debashish Mazumder, Isotope Ecologist
- Dr Karina Meredith, Acting Head of Environment

Thursday, 24 June 2021

Parliament House, Canberra

Fisheries Research and Development Corporation

- Dr Patrick Hone, Managing Director
- Mr Wayne, Hutchinson, Research Portfolio Manger

Monday, 26 July 2021

Northern Territory Legislative Assembly, Darwin City

Paspaley Pearling Company

- Dr Sam Buchanan, Chief Operating Officer
- Mr James Paspaley, Executive Director
- Mr Tony Thiel, General Manager, Production

Humpty Doo Barramundi

- Mr Daniel Richards, Chief Executive Officer
- Mr Robert Richards, Managing Director and Board Chairperson

Northern Territory Government – Department of Industry Tourism and Trade

- Mr Luke Bowen, Deputy Chief Executive Officer
- Mr Ian Curnow, Executive Director, Fisheries Division
- Mr Matt Osborne, Program Leader, Aquaculture and Regional Development

Thursday, 12 August 2021

Parliament House, Canberra

Northern Territory Seafood Council

- Mrs Katherine Winchester, Chief Executive Officer

Seafarms Group

- Dr Chris Mitchell, Executive Director

Thursday, 26 August 2021

Parliament House, Canberra

Seafood Industry Australia Ltd

- Ms Veronica, Papacosta, Chief Executive Officer

Thursday, 21 October 2021

Parliament House, Canberra

Blue Economy Cooperative Research Centre

- Dr John Whittington, Chief Executive Officer

Thursday, 28 October 2021

Parliament House, Canberra

The Nature Conservancy Australia

- Dr Heidi Alleway, Global Aquaculture Scientist
- Dr Chris Gillies, Oceans Program Director (Australia)

Monday, 8 November 2021

Parliament House, Canberra

Australian Prawn Farmers Association Inc

- Mrs Kim Hooper, Executive Officer

Australian Sustainable Seaweed Alliance

- Jo Kelly, Chair
- Dr Catriona Macleod, Board Director
- Dr Adam Main, Board Director

The Company One

- Dr Richard Knuckey, Managing Director

Tuesday, 9 November 2021

Parliament House, Canberra

Australian Barramundi Farmers Association

- Dr Ken Chapman, Chair
- Ms Jo-Anne Ruscoe

Mainstream Aquaculture Group

- Mr Boris Musa, Managing Director and Chief Executive Officer

Thursday, 25 November 2021

Parliament House, Canberra

Department of Agriculture, Water and the Environment

- Ms Emma Campbell, First Assistant Secretary, Agvet Chemicals, Fisheries, Forestry and Engagement Division
- Dr Narelle Clegg, Assistant Secretary, Animal Health Policy Branch, Biosecurity Animal Division
- Dr Peter Finnin, Assistant Secretary, Animal Biosecurity Branch, Biosecurity Animal Division
- Dr Robyn Martin, First Assistant Secretary, Biosecurity Animal Division
- Mr Liam Tucker Assistant Director, Fisheries Branch, AgVet Chemicals, Fisheries, Forestry and Engagement Division

Friday, 26 November 2021

Parliament House, Canberra

Australian Abalone Growers Association

- Mr Nicholas Savva, Executive Officer
- Mr David Wood, Chief Executive Officer, Yumbah Aquaculture Ltd

Tasmanian Salmonid Growers Association Ltd

- Ms Depha Miedecke, General Manager, Strategy and Technical, Petuna Aquaculture
- Ms Pene (Penelope) Snashall, Communication Manager, Huon Aquaculture

- Ms Angela Williamson, Communications Advisory Group Lead

Australian Southern Bluefin Tuna Industry Association

- Mr Brian Jeffriess, Chief Executive Officer

Thursday, 2 December 2021

Parliament House, Canberra

Fisheries Research and Development Corporation

- Mr Joshua Fielding, Senior Portfolio Manager
- Dr Patrick Hone, Managing Director
- Mr Wayne Hutchinson, Research Portfolio Manager