FISHERIES RESEARCH & DEVELOPMENT CORPORATION

Investigate changes in acceptance of wild caught Barramundi in the food service and hospitality market sectors

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In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

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- 100+ chefs and food service businesses around Australia who participated in our survey and focus groups
- Wholesalers, Distributors and Retailers who helped inform our discussions

Abbreviations

ABFA:	Australian Barramundi Farmers Association
ASCRC:	The Australian Seafood Cooperative Research Centre
COP:	Code of Practice
FRDC:	Fisheries Research and Development Corporation
QSIA	Queensland Seafood Industry Association
QSMA:	Queensland Seafood Marketers Associations
NTSC:	Northern Territory Seafood Council
USC:	University of Sunshine Coast

Executive Summary

In 2017 and 2018, wild-caught Barramundi fishers experienced large price fluctuations, with prices falling to an all-time low. Anecdotal information suggested that this was, in part, due to a lack of development in packaging, presentation and grading of products, which in turn had seen demand from the foodservice and hospitality sectors decline over time.

Foodservice operators rely on and have business models built around consistent supply, quality, and price. Farmed Barramundi (Australian and imported) businesses have, over the past 10 years, spent considerable time and resources on improving quality and have increased production to fill supply gaps when wild-caught Barramundi is not available. Many food service sectors have responded very positively to this, such that Barramundi is now a very common product offering.

At a Queensland Seafood Marketers Association workshop attended by key Barramundi businesses held in June 2018, it was agreed that further research was needed to understand what the wild catch Barramundi sector needs to deliver in terms of user-friendly packaging and presentation to ensure that the market supported any new approach undertaken by the wild Barramundi sector.

This report details the results of a comprehensive market study to better understand the foodservice sectors and their needs was considered critical for the wild Barramundi industry to build and implement a cohesive market development strategy - incorporating consumer education, product development and supply chain improvement.

The project had four objectives:

1. **Market research**: To research the food service and hospitality sectors to gain insights into the drivers and barriers in demand for wild-caught Barramundi across the different industry sectors
2. **Packaging, presentation, and quality**: To document new packaging, presentation and quality requirements needed to improve market share for wild-caught Barramundi
3. **Resources for product/market development:** To identify and document resources that can be used by Barramundi fishers to develop, trial, and evaluate new product packaging formats, product presentation and quality requirements targeting the needs of the food service and hospitality sectors
4. **Strategy development:** To develop and extend a wild Barramundi market development and positioning strategy.

Essentially there was good awareness of wild-caught Barramundi (notwithstanding that little was really known about the product) among chefs and food service buyers. Still, there were significant barriers to purchase, including:

- The perception that wild-caught product is not available all year round and that the quality is inconsistent
- There is a variable understanding of the differences between wild and farmed Barramundi and some clear misconceptions
- There is no clear value proposition to purchasing wild-caught Barramundi
- The provenance and authenticity of a genuine wild-caught product is not available to buyers, nor is its provenance clearly traceable.

There are also clear opportunities to change this:

- Chefs and their customers value a strong “local” story, and “wild-caught by Australian fishers” is one they are interested in

- The whole category (including farmed, wild-caught, Australian, and imported) needs a lasting and intentional shift to improve its perceived value.

The wild Barramundi story, combined with a stable price, and consistent supply (in formats end users prefer), can transform the wild Barramundi industry. But this is a significant challenge and one that a focused industry-wide effort can only overcome.

An Australian Wild-caught Barramundi Food Service Market Development Strategy (2023-2028) has been developed to create a distinctive position for Australian wild-caught Barramundi (See Attachment 18) by addressing the barriers and capitalising on the opportunities. The strategy details key enabling activities that need to be addressed first. This is followed by market competitiveness activities (activities that help the product stand out from competitors) and market creation activities (activities that create a new uncontested space).

New resources to support the strategy implementation were also developed as part of this project. These include:

- Market research protocol (short and long form) for ongoing customer and supply chain research – Attachments 2, 3 and 4)
- Wild Barramundi Code of Practice detailing best practice hygiene and product management protocols – Attachment 13
- Wild Barramundi product specifications (chilled whole fish and frozen fillets) – Attachments 11 and 12
- Wild Barramundi product and processing flow chart – Attachment 10
- Sustainable packaging guide (including packaging options fact sheets and a benefit-cost framework – Attachment 14
- A user experience audit identifying where to communicate with and influence supply chain and end users – Attachment 15
- Draft Australian wild-caught Barramundi website – Attachment 16
- Draft Australian wild-caught Barramundi trust mark – Attachment 17

If the strategy is funded and implemented, there are two potential areas fishers could benefit financially due to:

1. Reduced price variability by managing factors within the industry control (and minimizing the impact of factors outside their control)
2. A sustained price premium (over time) for a product that consistently meets customer specifications and expectations.

While this research focused on the food service sector, changes recommended in the strategy are likely to have broader applicability in the retail sector and other consumer-facing channels, with consequent financial benefits accruing to individual fishers who implement the strategy's recommendations.

It is recommended that:

1. A series of workshops and consultations occur with fishing operators and their supply chain partners to operationalise the Code of Practice and product specifications. This could be done with Curtin University and QSMA
2. A trial of provenance and authenticity technologies be conducted with operators to identify technologies most suitable for the fishing and supply chain conditions and to demonstrate the benefits of implementing these from a market perspective
3. An industry and market communication program be established with the website developed as part of this project as the backbone for accessing resources and materials needed by operators, end users and consumers, and communicating key messages and activities to them

4. A provenance database is established to match the ABFA database, and a collaborative project be developed to educate end users about the difference between farmed and wild products (within an overall Barramundi category education effort)
5. A regular market research program is established to monitor and evaluate any industry changes and ensure ongoing transparency of potential market opportunities.

Keywords

Market research, Foodservice, packaging, quality, market strategy, Australian wild-caught Barramundi, *Lates Calcarifer*

Introduction

In 2017 and 2018, wild-caught Barramundi fishers experienced large price fluctuations, with prices falling to an all-time low. Anecdotal information suggested that this was, in part, due to a lack of development in packaging, presentation and grading of products, which in turn had seen demand from the foodservice and hospitality sectors decline over time.

Foodservice operators rely on and have business models built around consistent supply, quality, and price. Farmed Barramundi (Australian and imported) businesses have, over the past 10 years, spent considerable time and resources on improving quality and have increased production to fill supply gaps when wild-caught Barramundi is not available. Many food service sectors have responded very positively to this, such that Barramundi is now a very common product offering.

Research conducted as part of the Seafood CRC found that about 40% of consumers prefer wild-caught to farmed Barramundi, 10% prefer farmed Barramundi, and about 50% were ambivalent. The two top reasons for preferring wild-caught were reported as taste and because wild Barramundi is more natural. No research was undertaken to profile those customers who preferred wild-caught Barramundi (demographics, place of purchase, product format, and packaging preferences).

At a Queensland Seafood Marketers Association workshop attended by key Barramundi businesses held in June 2018, the following issues were highlighted:

- Catches of wild Barramundi increased to about 1,297 tonnes in 2017 (897 in Qld and 400 in NT). According to industry sources, Australian farmed Barramundi volume grew by 8% in 2017.
- At the same time, the market share of wild-caught Barramundi had decreased nationally in an otherwise healthy Barramundi market.
- There was strong consumer demand, with FRDC consumer research (2017) indicating that 1 in 5 consumers will choose Barramundi when given a choice.
- There was little product differentiation between wild-caught products and competitors (including but not restricted to Australian farmed and imported Barramundi), particularly at the consumer level. There was also very little understanding among consumers about the difference between wild and farmed Barramundi.
- Some of the reported reasons for the price drop were inconsistent portion control, grading and origin labelling, as well as inconsistent packaging.

These issues were then framed as three key problems. Working groups then worked on each of the problems to come up with suggested actions.

Problem 1: *Identity "Loss of" / branding and provenance resulting in the lack of consumer education*

The working group agreed that branding should be developed to create a clear identity. Questions were raised as to whether to do it jointly with farmed Barramundi. This needs to be further explored. It was also agreed that consumer education was needed to differentiate Barramundi from competitors. Key questions were identified as follows:

- What do they want – fresh/frozen/portions/wild v farmed?
- What do they need?
- What do they know?
- What does wild Barramundi mean to the consumer?
- What is important to them - Australian provenance?

Problem 2: *Quality Assurance / when it comes to grading and size of fillet, packaging and labelling.*

The working group suggested that best practice fish handling knowledge should be revisited with fishers. They agreed that a Code of Practice (COP) should be developed and to investigate establishing a logo only to be used where fish meet the agreed specifications. Suggested specifications to be included in the COP included:

- specify mesh size for target markets for fish
- mandate 2-hourly net clearing
- ensure fish are taken directly from the net, immediately cut for bleeding, and placed straight into a tub of seawater
- require, where possible, that fish are stored in ice/water slurry (1°-2°C) for less than 12 hours
- indicate a preference for daily processing – over rib cage filleting
- require that fish are filleted into salt brine
- state fillets are to be bagged individually (noting that some buyers prefer not to receive additional plastic use)
- state that fillet cartons are kept in a -40°C freezer

Problem 3: Continuity of Supply – and the issues surrounding a managed seasonal fishery.

Wild-caught Barramundi is generally unavailable as 'fresh' in Oct/Nov/Dec/Jan. It was considered that education about the seasonality of fresh fish was needed, as well as an investigation into the potential for freezing to feather supply.

The working group agreed that further research was needed to understand what the wild catch Barramundi sector needs to deliver in terms of user-friendly packaging and presentation to ensure that the market supported any new approach undertaken by the wild Barramundi sector.

Before resources are spent developing a possible solution in terms of packaging, presentation, and quality, the current anecdotal evidence regarding the cause/s of the reduction of market share for wild-caught Barramundi needs to be identified. Only then can suitable and, if required, new/alternative marketing and development strategies and approaches be identified and implemented.

A better understanding of the foodservice sectors and their needs was considered critical for the wild Barramundi industry to build and implement a cohesive market development strategy - incorporating consumer education, product development and supply chain improvement. The 2018 workshop participants agreed to form a working group, led by QSMA, to research the barriers and drivers to purchasing Barramundi within the foodservice and hospitality sector, which includes head chefs.

Objectives

1. **Market research**: To research the food service and hospitality sectors to gain insights into the drivers and barriers in demand for wild-caught Barramundi across the different industry sectors
2. **Packaging, presentation, and quality**: To document new packaging, presentation and quality requirements needed to improve market share for wild-caught Barramundi
3. **Resources for product/market development:** To identify and document resources that can be used by Barramundi fishers to develop, trial, and evaluate new product packaging formats, product presentation and quality requirements targeting the needs of the food service and hospitality sectors
4. **Strategy development:** To develop and extend a wild Barramundi market development and positioning strategy

Method

Project management and guidance

Honey & Fox coordinated and managed the project, ensuring that all elements were completed. We established a project team comprising Honey & Fox, USC, Curtin University and QSMA. The group met regularly to discuss progress and to guide the market research, ensuring that it was focused on important issues. The group helped interpret the market research and provide input into developing a market-driven quality standard and the draft market development strategy. Neil Moretto from QSMA managed communications with fishers from Queensland and Northern Territory to ensure that they were engaged and participated in the project. QSMA also organised interviews with fishers and the project workshops.

Project communications

A project website was established to support collaboration and ongoing input to the project as it progressed. The final documents and reports were provided in a digital format and made available via this site and other channels (including QSMA consultation).

During this project, three face-to-face workshops were conducted with fishers and supply chain partners – two in Darwin (January and October 2021) and one in Cairns (October 2021). A workshop that had been planned for Cairns in January 2021 was cancelled due to COVID and weather issues. Participants from Cairns joined the Darwin workshop via zoom.

Research program

Objective 1: Market research

A three-stage sequential design was used, enabling the researchers to triangulate data from key stakeholders and to ensure the issues were clearly identified as the basis for strategy development as well as to inform any packaging, presentation, and quality initiatives.

Stage 1a: Desktop review of existing consumer research

A review of previous Seafood CRC and FRDC consumer projects and other publicly available data sets was undertaken to identify trends, preferences, and attitudes towards wild-caught seafood. Specifically, the three Omnibus studies undertaken by the Seafood CRC were reviewed to examine preferences for wild versus farmed fish. The datasets were mined to develop a profile of consumers preferring wild-caught.

The ABFA provided permission to use their dataset from a recent consumer insight study for farmed Barramundi undertaken by Professor Meredith Lawley. This enabled the project to build a consumer profile with a reasonably high confidence level and inform the rest of the research. As we were using secondary data, there may have been consumer issues that were not tested, e.g., attitudes towards Indigenous fishing. This was dealt with by including a question in the interviews with the supply chain participants (see Stage 1c) about what they thought their consumers were concerned about and how those concerns may affect demand.

Stage 1b: Interviews with Barramundi fishers

In-depth interviews were conducted with fishers who catch wild Barramundi in both Queensland and Northern Territory (approx. 1 hour each), asking:

- About their current supply chains i.e., whom do they sell to and how – direct or through a wholesaler?
- What do they know about their markets, including their customers and endconsumers?

- What do they see as the main barriers and drivers for market development in the foodservice sector?

Attached is a copy of the information sheet and the interview protocol (see Attachment 6). provided to fishers who were asked to participate in the research. All interviews were recorded, and transcripts were created to assist with analysis.

Stage 1c: Foodservice/supply chain partner interviews

The food service and hospitality sectors are diverse and comprises many segments, including:

- Fish and chip shops/takeaways
- Cafes/coffee shops
- Catering services (for all sectors)
- Functions and events
- Pubs and clubs
- Restaurants – low-cost, medium and premium
- Cruise ships/airlines/resorts

A foodservice sector sampling strategy (see Attachment 1) was developed to ensure representation across different foodservice and hospitality sectors (based on the potential for wild Barramundi and sector size), as well as a spatial representation. A quota approach was used to select samples to ensure Queensland and the Northern Territory food service customers were well represented in the final sample. Additionally, referrals were sought from fishers (Stage 1b) for inclusion in the sampling pool.

An interview protocol was developed for the food service in-depth interviews (see Attachment 2). In addition to the food sector end-users, interviews were conducted with the supply chain wholesalers and distributors (see Attachment 3). Issues explored included preferred quality, price points, size, product format and packaging.

Respondents were selected to ensure representation geographically and across the supply chain. Interviews were conducted between October and December 2020. Initially, 35 in-depth interviews and 15 shorter responses were planned. Due to difficulty recruiting participants (even with introductions by industry contacts), 21 participants were interviewed in-depth (60 to 90 minutes), and 60 respondents completed a short interview of approx. 15 minutes. A copy of this shortened survey is attached (see Attachment 4).

After the in-depth interviews, a desktop review of menus for 50 restaurants was conducted to understand the frequency that Barramundi appeared on menus, if/how they were described (wild caught or farmed and the price. These were selected using rankings by TripAdvisor (www.tripadvisor.com) of the top ten seafood restaurants in Darwin, Cairns, Brisbane, Sydney, and Melbourne. These included 39 restaurants linked to chefs who were interviewed.

Objective 2: Packaging, presentation, and quality

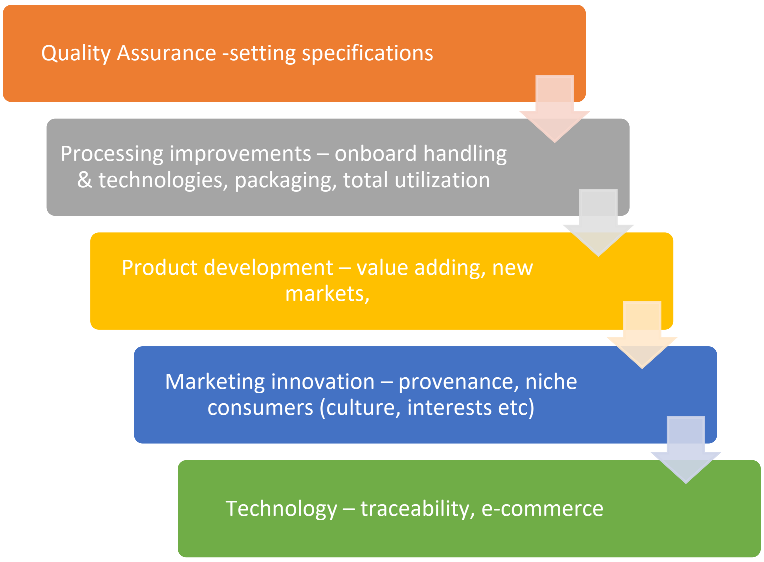
The research activities for this objective focused on:

- documenting the packaging, presentation and quality requirements expected by the food service and hospitality sectors
- identifying the resources available to fishers and the supply chain to increase the market share of wild-caught Barramundi
- reviewing packaging and formats used by competitor products

The in-depth interviews with supply chain partners and the chefs/food service buyers (Stage 1c) included questions on the packaging and product format preferences as well as quality specifications and expectations A desktop review of sustainable packaging options supplemented this activity.

Implementing changes to the packaging, presentation and quality of wild-caught Barramundi will rely heavily on the fishers involved. Fishers were invited to participate in the project and to codesign the proposed COP. To help achieve this, the fishers were introduced to the Curtin University product intervention hierarchy (see Figure 1) at a workshop held in Darwin in January 2021. The workshop was attended by fishers based in Northern Territory and Queensland. Following the workshop, further consultation with fishers occurred to help co-design a process to improve the packaging, presentation, and quality of wild-caught Barramundi. The outcome is presented in the results section of this document:

Figure 1: Product intervention hierarchy developed by Curtin University



Objective 3: Resources for product/market development

A desktop review was undertaken to identify existing resources to support wild Barramundi fishers to develop, trial and evaluate new product packaging formats, targeting the needs of the food service and hospitality sectors.

All relevant resources identified were included in the resources section of the project website and discussed at the two workshops. Resources were also provided to fishers on request.

Objective 4: Strategy development

The research conducted for Objectives 1, 2 and 3 was then used to create a market development and positioning strategy for Australian wild caught Barramundi. QSMA led the fisher and supply chain consultation, including convening and organising three workshops to discuss and get feedback on the project research outputs, including:

- Strategies to address issues regarding variable quality
- Segmenting the foodservice sector to identify those segments with the most potential to purchase wild-caught Barramundi
- Resources that can be used by wild Barramundi fishers to develop, trial, and evaluate new product packaging formats targeting the needs of the foodservice and hospitality sectors, including what the food service sector wants in terms of packaging/provenance stories etc
- The potential market positioning and the perceived competitive advantages of Australian wild Barramundi over competitors in the market.
- The draft quality standard and COP.

The draft strategy was discussed with participants at two workshops in October 2021, one in Cairns and one in Darwin. Based on the feedback from these workshops, a final draft Australian wild Barramundi food service market development strategy with clear implementable activities for individual fishers and their supply chain partners was developed. A further round of consultation was conducted to create the final version.

Results and Discussion

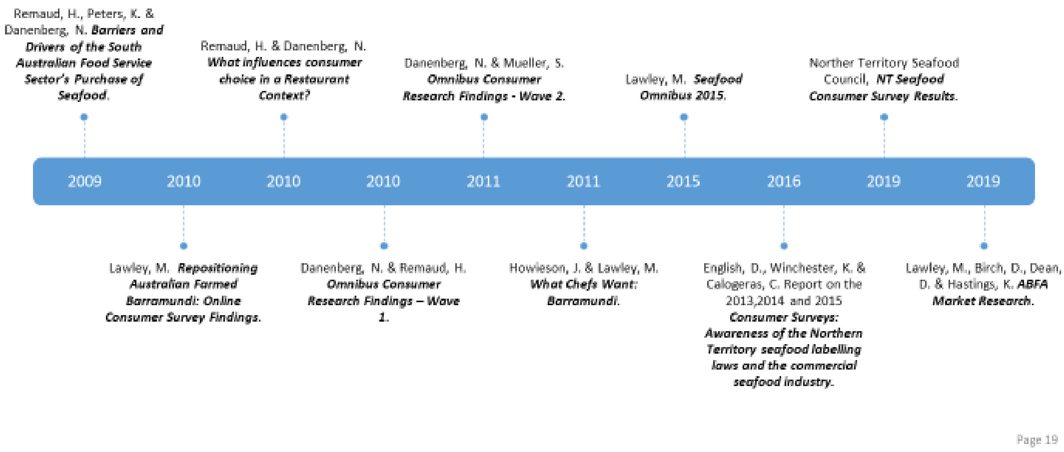
Objective 1: Market research

The market research was undertaken in three parts to enable the triangulation of data to compare perspectives on the needs of the foodservice and hospitality sectors. The results of each part of the research are presented and discussed below.

Stage 1a: A desktop review of existing consumer research

The Australian Seafood CRC and FRDC research reports from 2009 to 2019 were reviewed for results pertinent to the current study (see Figure 2 below).

Figure 2: Previous studies reviewed as part of this project (chronological order)



Key findings relevant to and further investigated in this research are summarised here:

1. **Chefs**
   Previous research highlights that chefs are time poor. They value convenience and rely heavily on their suppliers for information. The most important criterion chefs value is quality consistency. While approximately 25% of chefs buy some seafood direct, they rely heavily on wholesalers and distributors and hence are 'removed' from fishers with no direct communication either from chefs to fishers or from fishers to chefs. Wholesalers and distributors are perceived by chefs as gatekeepers who could provide better service.

2. **Consumers**
   Consumers value 'Australian' rather than distinguishing between farmed and wild-caught fish. Most consumers are ambivalent about the differences between farmed and wild-caught. Farmed versus wild caught is not highly important in the overall menu choice decision. Consumers who prefer wild caught are more likely to be male, Queenslanders, older and more frequent seafood consumers.

3. **Barramundi**
   Barramundi appears to be more popular on Queensland menus (rather than Sydney) and may be perceived specifically as a 'Queensland/Northern Territory' fish, so is considered 'local' in these states as well as Australian.

4. **Wild caught Barramundi.**
   Wild caught Barramundi is perceived to be suited to upscale restaurants, but even in this setting may be perceived as “not exotic/exclusive enough”. Wild caught Barramundi is seen as suffering from variability in supply, size, price, and availability.

Attachment 5 provides more details of the desktop review and includes two tables. Table 1 focuses on results from research with chefs, while Table 2 summarises the results of consumer studies, specifically focusing on preferences for farmed versus wild-caught seafood, and finally, Table 3 summarises a study focusing on consumer choices in restaurants.

In addition to the consumer research report analysis, two industry-wide promotional campaigns were also reviewed. Key points regarding these are summarised here.

1. **Love Australian Prawns**
   This promotional campaign is a collaboration between the Australian Council of Prawn Fishers (ACPF) and the Australian Prawn Farmers Association (APFA) that commenced in 2013. Voluntary contributions from members of both organisations fund the campaign. A range of collateral, including recipe books, posters, cabinet stickers, decals etc., is produced and made available to specialist seafood retailers and supermarkets. The campaign includes a website, content shared on campaign accounts across YouTube, Facebook, and Instagram, and other public relations activities.

   Of note, the campaign promotes ‘Australian’ and does not distinguish between farmed and wild-caught, but rather ‘Australian’ versus imported. Evaluations indicate that the Love Australia Prawns brand is recognised by 1 in 5 Australians and has helped increase demand for Australian prawns.

2. **Australian Farmed Barramundi – the Dream Fish**
   As participants in the Australian Seafood CRC, the Australian Barramundi Farmers Association (ABFA) commissioned several projects looking at establishing quality standards and increasing demand for Australian farmed Barramundi across all channels, that is, both consumers and the food service sector. While one project did develop a branding campaign around ‘The Dream Fish’ concept, this was not adopted by the ABFA. While the ABFA as an organisation has moved forward with quality standards and an associated quality tick, several individual farmers have progressed with developing individual brands, including Cone Bay, Humpty Doo and Infinity Blue. In all cases, these brands do not mention ‘farmed’. Coral Coast is positioning its brand as ‘sustainable aquaculture.

Stage 1b: Interviews with Barramundi fishers

In-depth interviews were conducted with 12 wild Barramundi fishers in Queensland and the Northern Territory during October and November 2020. The results of the interviews aimed to better understand what the fishers perceived as the drivers and barriers in demand for Australian wild caught Barramundi.

A summary of their combined responses is detailed in Attachments 7a and 7b. Key challenges as perceived by the fishers were:

- Wild Barramundi is undervalued in the market
- Inconsistency in supply and quality impacted negatively on the perception and price paid
- There are opportunities to value-add (and minimise waste), but there is a lack of clarity about the market demand for such products
- There is limited and inconsistent feedback from the supply chain about product and demand
- Buyers say that sustainability is not essential.

At the same time, fishers identified several potential opportunities that could be capitalised upon, including:

- Fishers could work closely with the supply chain to develop new products and markets

- Marketing and promotion – focusing on provenance
- Consumer education
- Development of a COP to improve quality consistency, and
- Maximise the value of the whole catch.

Stage 1c: Foodservice/supply chain partner interviews

People interviewed included supply chain partners (wholesalers, distributors, and agents) and end-users in the food service sector (chefs, owners and managers). A summary of the interview findings is provided here. A full report of the work undertaken by the University of Sunshine Coast (USC) is provided in Attachment 8, with supplementary research undertaken by Honey & Fox Pty Ltd (H&F) (see Attachment 9).

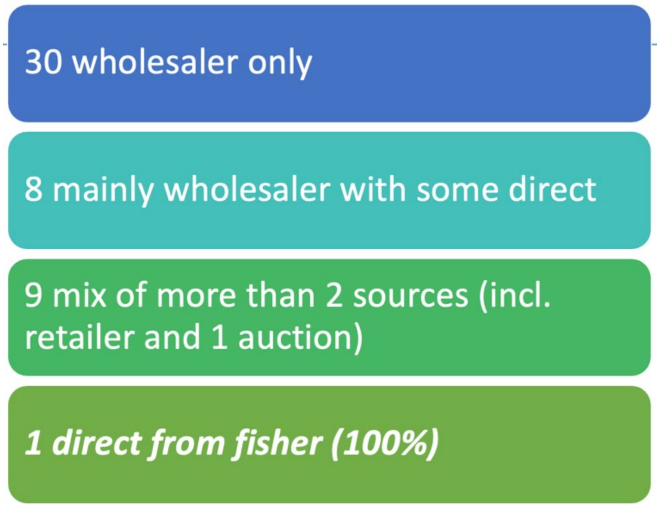
Table 1: Foodservice and supply chain interview respondents (USC and H&F combined

Respondents	In depth interview	Shorter Interview	Total
Supply chain (wholesaler/distributor/ agent)	15	12	27
End user (chef/owner manager)	6	48	54
Total	21	60	81

Supply chain partners

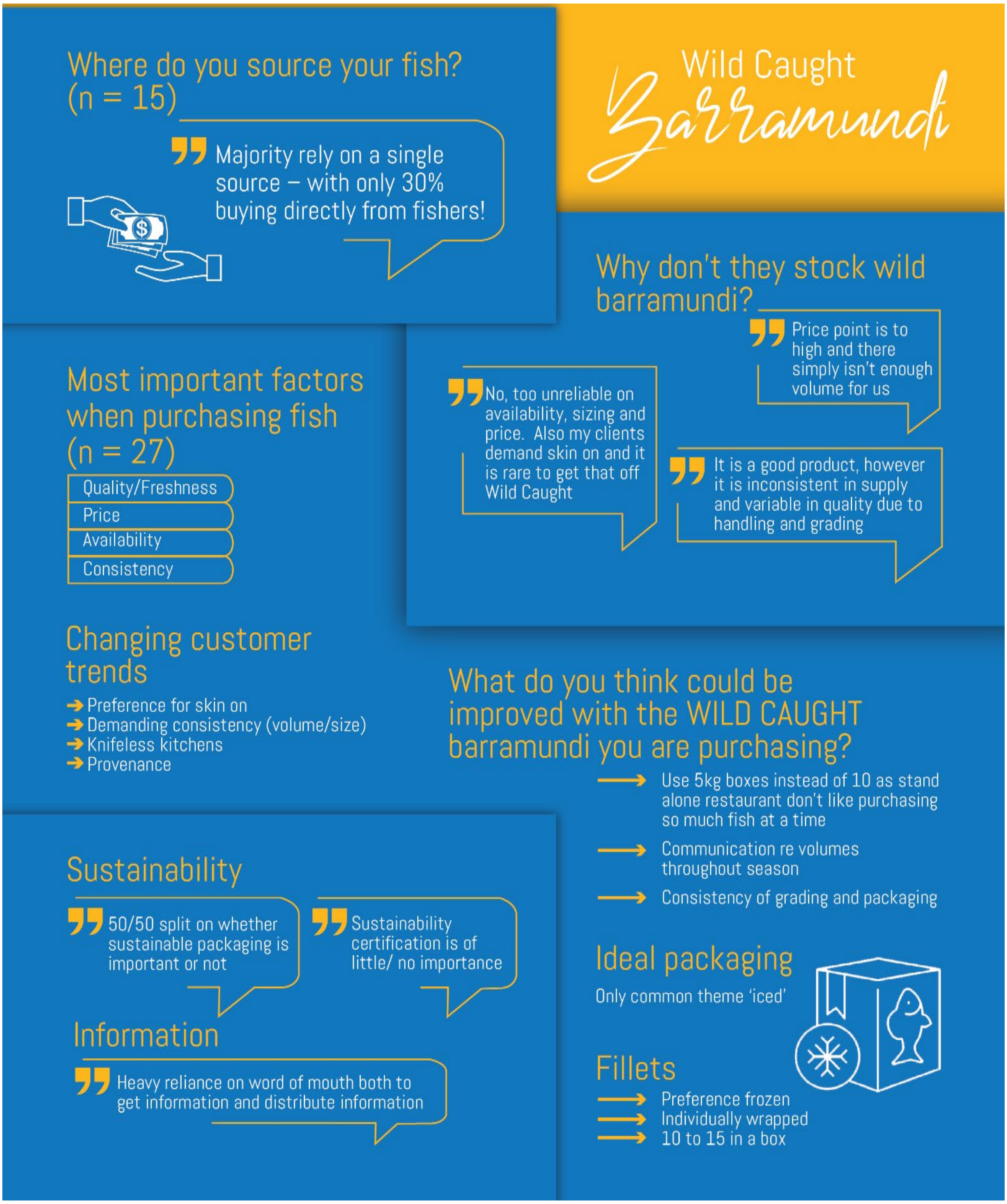
Wholesalers are clearly the gateway to supplying the food service sector in Australia (see Figure 3 below). This is an important consideration in developing an improved market positioning for wild-caught Barramundi within the Australian food service sector because to be successful, information and product must flow up and down the chain from the producer to the end users. The general perception among chefs is that the wholesalers provide little transparency between the fishers and customers in the foodservice and hospitality sectors.

Figure 3: Where chefs/restaurants source their Barramundi (all variants) n=48.



Interviews were conducted with 27 supply chain partners. Figure 4 below provides a summary of these interviews' perspectives.

Figure 4: Supply chain partner perspectives of Australian wild-caught Barramundi.



Source: USC 2021

Chefs

A total of 54 interviews were undertaken with chefs/food service sector buyers. Few of those interviewed stocked wild Barramundi. If they did not stock wild-caught Barramundi, they were asked why not (see Figure 5 below). Essentially Barramundi is a crowded category with little differentiation between wild, farmed, Australian and imported.

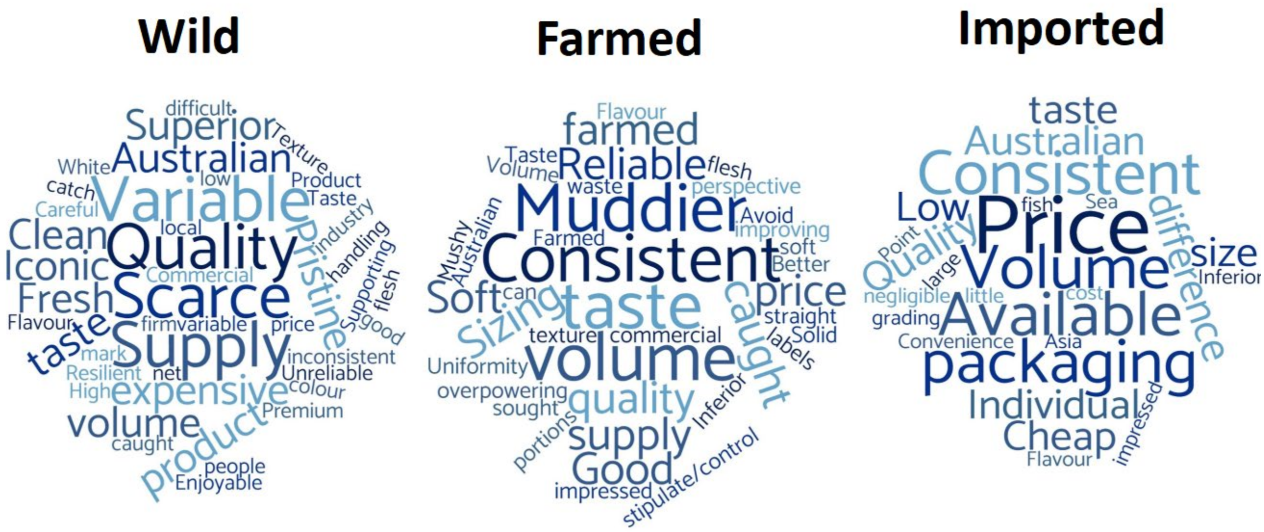
Figure 5 Barramundi products stocked by chefs interviewed.

Type stocked	Why don't you stock wild?
4 stocked 100% wild Barramundi	"Too bland and mainstream"
34 stocked 100% farmed Barramundi	"Price and availability"
7 stocked a mix of farmed and wild	"It's a quality product but consistency is an issue"
1 stocked imported	"need the skin on – volume and price dictates farmed"

Source: USC, 2021

Chefs were also asked to describe the different Barramundi variants. Word clouds (figure 6 below) were created, clearly showing perceived value and quality differences. Note that the size of the word relates to how often that word was used – the larger the word, the more times it was mentioned. Variable quality and scarce supply were key issues for the wild-caught product. Still, other descriptors provide an opportunity to create a distinctive position within the crowded Barramundi category.

Figure 6: Words used to describe the different Barramundi variants.



Source: USC, 2021

Figure 7: Chef perspectives of Australian wild-caught Barramundi.

Source: USC 2021

Menu review

A total of 89 restaurant websites were reviewed, including those of 39 chefs interviewed (see Table 2 below), and the top 50 restaurants ranked by Trip Advisor (10 in each of Darwin, Cairns, Brisbane, Sydney, and Melbourne). The review considered whether Barramundi was mentioned as being on the menu, how it was described and the price. Figure 9 below summarises the findings of this review.

Table 2: Websites of 39 chefs interviewed.

Location	Number
Queensland	32
NSW	3
Victoria	3
ACT	1

Table 3: Menu reviews by type of venue.

Venue type	Number
Restaurant	30
Functions	2
Corporate caterers	2
Hotels	2
Club	1
Hospital	1

Seven of the 89 menu descriptions mentioned farmed Barramundi by brand, with none at the time of the review mentioning any wild-caught Barramundi brands. Figure 8 below provides examples of the kinds of menu descriptions found for wild-caught and farmed Barramundi. There appears to be no price premium evident for wild Barramundi; if anything, the wild-caught product was more prevalent at the lower end of the scale e.g., wild barra fish and chips for $18. Most of the restaurants had Barramundi on the menu at a price point of between $32 to $42 per plate.

Figure 8: Menu descriptions used for wild-caught and farmed Barramundi

Wild barra

- *Wild Barramundi Fish & Chips Tempura battered fish, smashed peas, lemon, tartare served with fries*
- *Local Wild Caught Barramundi*
- *Local wild caught grilled Barramundi*
- *Stir-Fried Local Wild Caught Barramundi With Seasonal Vegetables, Chilli, Ginger & Steamed Jasmine Rice*
- *Oven Baked Wild Caught N.T. Barramundi with Garlic, Lemon & Caper Butter Served with Chips*

Other (farmed)

- *Crispy Skin Infinity Blue Saltwater Barramundi Charred zucchini, confit tomatoes, white onion soubise & tarragon dressing*
- *Risotto Conchiglie Barramundi stock with steamed black mussels, Noosa scallops & Cloudy Bay clams*
- *Barramundi in brodetto (gf) barramundi (Cone Bay, WA) served in a saffron broth with kipfler potatoes, carrots and broccoli, fennel and chives*
- *Crispy-skin Grilled Barramundi Fillet With salt and pepper squid, braised fennel, fresh parsley and caper salsa, shaved fennel salad and lemon*

Source: USC 2021

Figure 9: Summary of the findings of the website and menu reviews.

Source: USC 2021

Insights from the market research

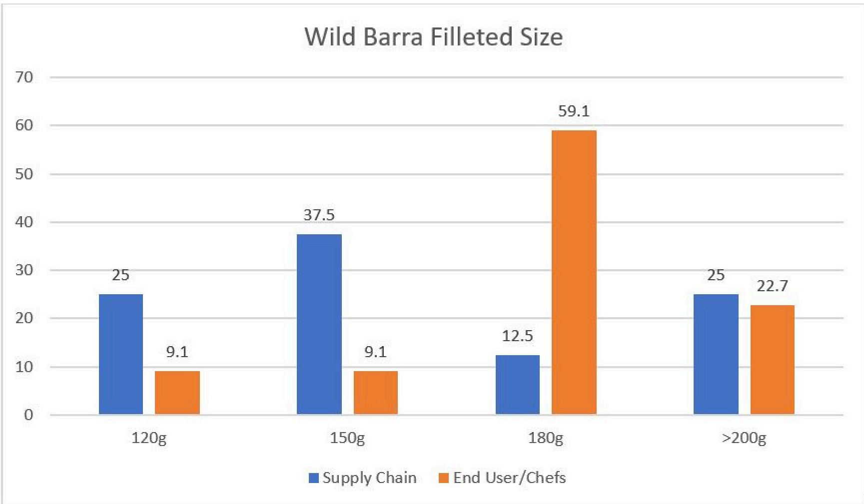
The market research identified many areas of agreement and some areas of difference and/or inconsistency, particularly between supply chain partners and chefs/food service buyers (summarised in table 4 below). Many of the areas of difference stem from a lack of credible sources of information.

Table 4 Areas of agreement and disagreement (chefs and supply chain partners).

Areas of Agreement	Areas of Difference/inconsistency
Top 3 most important criteria when purchasing fish are 1. Quality/freshness 2. Price 3. Reliability/consistency	Preferences for skin on vs skin off varies however there is a demand among chefs for a skin-on product.
Improvements in consistency of Wild Barramundi quality, supply, and grading are required to sustain a higher price premium	Suppliers and supply chain seem to prefer frozen while chefs prefer a mix of frozen and fresh
Provenance and authenticity is ranked as either important or very important	No clear preference for product format (whole vs fillet). Requirements vary within and between suppliers, supply chain and chefs
Both want more information about availability and characteristics of wild-caught Barramundi to justify a better price	No consistency in packaging requirements

For example, one major area of difference – for fishers, chefs and supply chain partners relates to frozen fillets (see figure 10 below). The fillets are usually provided by fishers as 1kg plus (see Attachment x). This means that at some point in the chain, to meet the needs of the end user, the fillets need to be portioned. This is most likely to happen at the restaurant level; however, with the growing trend of knifeless kitchens, the portioning may, in future, need to be done either on board prior to freezing or by a supply chain partner.

Figure 10: Comparison of the preferred fillet size for supply chain and chefs



The insights from the market research provided five themes to guide the development of quality systems, packaging, and the market development strategy. The key points are summarised in Figure 11 below.

Figure 11: 5 key themes summarised from the market research.

Source: USC 2021

Objective 2: Packaging, presentation, and quality

The fishers were introduced to the Curtin University product intervention hierarchy (refer to Figure 1 previously) at the January 2021 workshop held in Darwin and attended by fishers from the Northern Territroy and Queensland (some virtually). Based on this hierarchy, the fishers co-designed the following five-step process to improve the packaging, presentation, and quality of wild-caught Barramundi:

1. Develop and agree on quality parameters for whole fish and fillets

2. Develop and agree on product specifications for chilled whole fish and frozen fillets
3. Undertake product testing (on board fishing vessels and through supply chain monitoring) to better understand issues and compare with specifications and other data
4. Develop a Code of Practice for wild-caught Barramundi covering all steps in the supply chain from catch to customer (following agreed flow chart development)
5. Consider innovation in onboard and supply chain activities to increase end-user knowledge and support.

Using the market research findings and discussions with individual fishers, a set of draft quality parameters for whole fish and fillets were developed, ready for further testing in the fishery. A product and processing flow diagram was also developed (see Attachment 10), as well as draft product specifications for whole chilled (Attachment 11) and frozen fillets(Attachment 12)

A draft Code of Practice (COP) manual was then developed to detail a set of best practice hygiene handling and product management protocols (see Attachment 13).

All documents were provided in a Word document format to enable individual companies to develop their own flow chat, COP manual and product specifications.

In developing these materials, we consulted fishers and supply chain partners and asked them to review them as they were developed. We also conducted two workshops with experienced wild caught Barramundi fishers and business operators to ensure that resources were practical and parameters were achievable for them. Final drafts of the Code of Practice and product quality specifications were developed.

Objective 3: Resources for product/market development

The following existing resources are relevant to Australian wild-caught Barramundi product and market development:

- Stories for Success: a guide and templates to help producers develop and share their provenance stories www.honeyandfox.com.au/storytelling
- Traceability Chooser: an online guide to choosing a traceability system that meets individual business needs and capabilities. www.honeyandfox.com.au/traceability

New resources to support new product and market development were developed as part of this project. These include

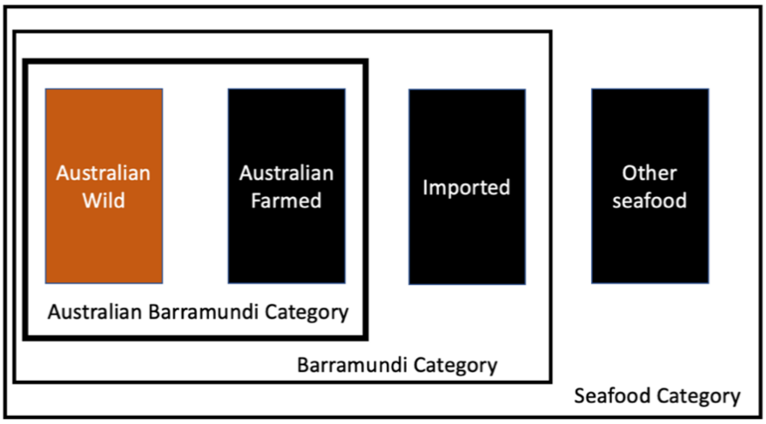
- Market research protocol (short and long form) for ongoing customer and supply chain research – Attachments 2, 3 and 4)
- Wild Barramundi Code of Practice detailing best practice hygiene and product management protocols – Attachment 13
- Wild Barramundi product specifications (chilled whole fish and frozen fillets) – Attachments 11 and 12
- Wild Barramundi product and processing flow chart – Attachment 10
- Sustainable packaging guide (including packaging options fact sheets and a benefit cost framework – Attachment 14
- A user experience audit identifying where to communicate with and influence supply chain and end users – Attachment 15
- Draft Australian wild-caught Barramundi website – Attachment 16
- Draft Australian wild-caught Barramundi trust mark – Attachment 17

Objective 4: A wild Barramundi market development and positioning strategy

The market research findings clearly indicate that the Barramundi category for the food service sector is crowded, with Australian and imported Barramundi dominating in terms of volume and consistency (see figure 12 below).

According to the chefs interviewed, wild-caught products are rarely offered outside Queensland and NT. There is a perception of limited supply, yet most wild-caught Barramundi is frozen, meaning that it can be offered year-round if the business model allows it. When asked about this, the view of wholesalers is that this would be difficult as the fishers are paid when the product is received at the wholesaler/distributor. Holding products would be financially risky due to the potential for price fluctuations and the need to hold inventory. Fishers supported this view.

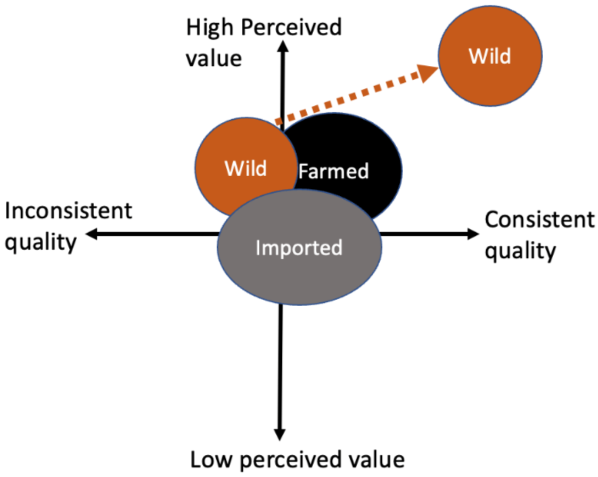
Figure 12: The Barramundi category



Source: Honey & Fox, 2022

The market research also provided some important insights into how wild-caught Barramundi could establish a distinctive position within the category (see figure 13 below) – owning a space that other Barramundi products cannot copy. The key to achieving this will be providing information and educating end users on the unique benefits and features of the wild product.

Figure 13: Relative positioning of wild-caught, farmed, and imported Barramundi



Proposed positioning

Based on the market research and the analysis undertaken as part of this project the proposed positioning for Australian wild-caught Barramundi is:

Simply the best Australian fish

Because it is

- Sustainably wild-caught by Australian fishers who are committed to preserving the fishery for future generations to enjoy
- Fresh, and Freshly Frozen, in a variety of product formats that can be tailored to the customer needs
- Underpinned by quality and provenance assurance so you know you're buying Australia's best

The strategy

An Australian Wild-caught Barramundi Food Service Market Development Strategy has been developed to create this distinctive position for Australian wild-caught Barramundi (See Attachment 18). A summary is provided in figure 15 below.

The strategy includes market competitiveness activities (activities that help the product to stand out from competitors) and market creation activities (activities that create a new uncontested space). However, some key enabling activities need to be addressed first. A three-horizon approach to this is proposed (see figure 14 below).

Figure 14: Proposed strategic three-horizon approach

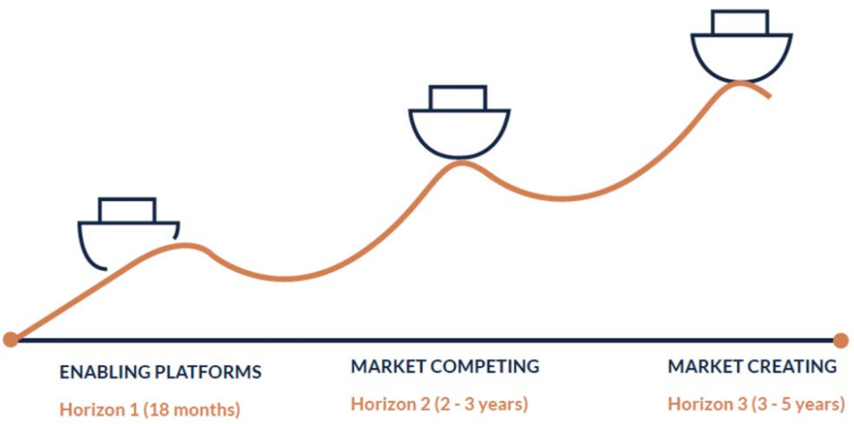
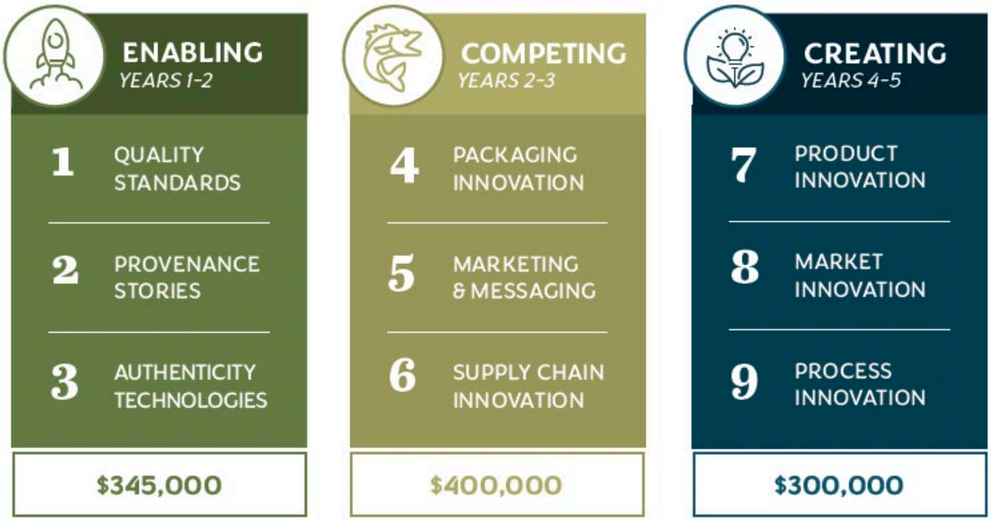


Figure 15: A summary of the Australian wild-caught market development strategy

The implementation plan

An implementation plan for the first horizon has been detailed in the strategy, while details for the second and third horizons will depend on the outcome of the enabling programs. It is recommended that a reference group be established to guide this implementation to establish performance monitoring systems. Initial estimates of implementation costs have been provided. Summary in Figure 16 below.

Figure 16: Estimated investment needed for implementation of the strategy



Conclusion

Essentially there was good awareness of wild-caught Barramundi (notwithstanding that little was really known about the product) among chefs and food service buyers. Still, there were significant barriers to purchase, including:

- The perception that wild-caught product is not available all year round and that the quality is inconsistent
- There is a variable understanding of the differences between wild and farmed Barramundi and some clear misconceptions
- There is no clear value proposition to purchasing wild-caught Barramundi
- The provenance and authenticity of a genuine wild-caught product is not available to buyers, nor is its provenance clearly traceable.

There are also clear opportunities to change this.

- Chefs and their customers value a strong "local" story, and "wild-caught by Australian fishers" is one they are interested in.
- The whole category (including farmed, wild-caught, Australian, and imported) needs a lasting and intentional shift to improve its perceived value.

The wild Barramundi story, combined with a stable price, and consistent supply (in formats end users prefer), can transform the wild Barramundi industry. But this is a significant challenge and one that a focused industry-wide effort can only overcome.

An Australian Wild-caught Barramundi Food Service Market Development Strategy has been prepared and is ready for implementation. Existing resources have been identified to help this implementation, and new ones have been developed. Additional work will be required to address the core barriers to purchase listed above.

There are some fishers and wholesalers, and distributors who, because of this project, have already started to work together or intend to work together, to introduce new products to the foodservice and hospitality sector, to improve quality practices and to provide more information about the origin of the product.

To achieve widespread and sustainable change as outlined in the strategy, a working group should be created to guide its implementation.

Implications

Implementing the strategic market development plan at both a company and whole-of-industry level provides an opportunity to create a distinctive position for Australian wild-caught Barramundi in the food service sector.

The strategy developed as part of this project includes a section on establishing baseline performance measures and a performance monitoring system. Without the baseline information, it is difficult to estimate the potential impact at this stage. It is recommended that both short- and long-term measures be used because research (Binet and Field, 2013) indicates that a consistent effort over at least five years is needed to build long-term brand-based sales growth (either value or volume). This is depicted in figure 17 below.

Figure 17: "The long and the short of it" Two ways that marketing works

If the strategy is funded and implemented, there are two potential areas fishers could benefit financially due to:

1. Reduced price variability by managing factors within the industry control (and minimizing the impact of factors outside their control)
2. A sustained price premium (over time) for product that consistently meets customer specifications and expectations.

While this research focused on the food service sector, changes recommended in the strategy are likely to have broader applicability in the retail sector and other consumer-facing channels. With consequent financial benefit accruing to individual fishers who implement the strategy's recommendations.

Recommendations

It is recommended that:

1. A series of workshops and consultations occur with fishing operators and their supply chain partners to operationalise the Code of Practice and product specifications. This could be done with Curtin University and QSMA.
2. A trial of provenance and authenticity technologies be conducted with operators to identify technologies most suitable for the fishing and supply chain conditions and to demonstrate the benefits of implementing these from a market perspective.
3. An industry and market communication program be established with the website developed as part of this project as the backbone for accessing resources and materials needed by operators, end users and consumers, and communicating key messages and activities to them.
4. A provenance database is established to match the ABFA database, and a collaborative project be developed to educate end users about the difference between farmed and wild products (within an overall Barramundi category education effort).
5. A regular market research program is established to monitor and evaluate any industry changes and ensure ongoing transparency of potential market opportunities.

Further development

1. Support industry-driven initiatives and develop case studies showcasing innovative packaging, market, and product development initiatives (perhaps on a one-for-one investment basis)
2. Conduct a waste audit for wild Barramundi fishers and across the supply chain to identify potential new product and market development opportunities and to consider implementing a circular economy approach.
3. Investigate opportunities for currently underutilised species (caught by wild Barramundi fishers) as part of a whole-of-catch value creation program.

Extension and Adoption

Individual companies are already implementing some of the recommended activities and are developing new product formats and potential markets. These activities include:

- Offering a skin on wild-caught Barramundi fillet for sale (chefs interviewed indicated a preference for this)
- Developing company provenance stories, websites, and social media content to engage with the food service sector
- Trialing of new packaging options
- Implementation of the onboard COP and product specifications tailored for the specific company needs

During the project, a Wild Barramundi website and a Facebook group were established to support communication and consultation with fishers and supply chain partners. This website has a password-protected (PW=Barra21) area where all project materials, presentations and reports are available. This website will remain alive and will continue to be maintained and updated periodically by Honey & Fox for six months (June 2023) until handed to an industry partner – potentially QSMA. See Attachment 20 for a PDF of the website pages.

During this project, three face-to-face workshops were conducted with fishers and supply chain partners – two in Darwin (January and November 2021) and one in Cairns (November 2021). A workshop that had been planned for Cairns in January 2021 was cancelled due to COVID and weather issues. Participants from Cairns joined the Darwin workshop via zoom. See Attachment 21 for a copy of the presentation provided to participants at the November 2021 workshops and Attachment 22 for a copy of the presentation provided at the January workshop.

Project coverage

The Principal Investigator and one of the fishers were interviewed in January 2021 by ABC Radio Darwin. The Principal Investigator did a follow-up interview in October 2021. The NT Seafood Council, QSMA and QSIA featured the project in their industry magazines and media (websites, social media etc). See Attachment 19 for the media coverage

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Appendix 1: Researchers and Project Staff

Jayne Gallagher
Jayne is the CEO and co-founder of Honey and Fox. An industry veteran, she has worked as the head of the Australian Seafood CRC trade and market development program, was the president of the International Association of Seafood Professionals and is the former business development manager of Seafood Services Australia. Jayne co-founded Honey and Fox in 2015 and now heads the bespoke research and marketing agency specialising in fishing and agriculture clients. Jayne was responsible for the overall management of the project and for managing and developing the strategic plan, market strategy and positioning strategy.

Dr Joanne Freeman
Jo is the Research and Engagement Director at Honey and Fox. Having previously worked as an export advisor and senior research fellow at @USC, she is all about insights and data and is one of the leading team members in the Australian Wild Barramundi project. Joanne's key role in this project was in managing and coordinating the different research pieces to build a cohesive picture of the drivers, and barriers, for the food sector demand of wild-caught Barramundi.

Helen Johnston
Helen has worked with food industries on marketing, branding and digital campaign delivery across local and international markets for over a decade. Qualified in user experience design, Helen always approaches creative communications from the customer's or audience's point of view. She helps companies and organisations connect with their markets by bringing their authentic provenance stories to life that resonate with customers in creative and compelling ways.

Neil Moretto
Neil is the secretary of the Queensland Seafood Marketers Association, Managing Director of Lenrex Pty Ltd and a consultant for Wild Gulf Barramundi. Neil's involvement in the Wild Barramundi project is to provide a communication link between the fishers and the supply chain participant. Working closely with Dr Freeman, Neil helped to ensure that the research results are communicated quickly and efficiently with the industry stakeholders.

Professor Meredith Lawley
Meredith Lawley has been an academic in marketing since the late 80s. Prior to this, she worked for market research companies and was the Theme Leader for Consumer Insights at Australian Seafood CRC for 6 years. Professor Lawley's work in the Wild Barramundi project was to oversee and undertake market research to gain insights into the drivers and barriers in demand for wild caught Barramundi across different food service industry sectors.

Dr Janet Howieson
Janet is an academic based at Curtain University, Perth. Her PhD is in algal biotechnology, and she has been in research and strategic planning positions across private and public sectors. Janet's work at Curtin University is in post-harvest seafood industry research. Janet led the parts of the project relating to supply chain monitoring and intervention, value chain analysis and implementation, and new product development,

Appendix 2: Project Materials Produced

Document details	Attachment Number
A food service sector sampling strategy	1
Interview protocol - food service in-depth interviews	2
Interview protocol - wholesalers and distributors	3
Shortened food service survey	4
Final Desktop Review Report (USC)	5
Interview protocol and information sheet - fishers	6
Fisher perspectives (summary and full insights report)	7a and 7b
Food Service and Supply Perspectives (USC report)	8
Food Service Perspectives Supplementary Report (H&F)	9
Product & Processing Flow Diagram	10
Draft product specification (Whole Chilled)	11
Draft product specification (Frozen Fillets)	12
Wild Caught Barramundi COP	13
Sustainable packaging guide	14
User experience audit	15
Draft Australian wild-caught Barramundi website	16
Draft Australian wild-caught Barramundi trust mark	17
Australian Wild-caught Barramundi Food Service Market Development Strategy	18
Project coverage summary	19
Project website pages	20
Presentation November 2021 workshop	21
Presentation January 2021 workshop	22

Link to Project Dropbox to access copies all project materials listed here

Additional materials available at www.australianwildBarramundi.com.au (PW+Barra21)