

The Retail Sale And Consumption Of Seafood In Melbourne

Volume I. Retailer Surveys, General Discussion And Conclusions

Report For The



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Foreword and Disclaimer

This report has been prepared for the
Fisheries Research and Development Corporation.

It is based on information gathered by the research team
from personal interviews with retailers and consumers
and from published reports and other materials.

We believe the report to be accurate
but it contains some evaluation of future events
and we take no responsibility for the information herein,
and readers should make their own enquiries
to satisfy themselves on all matters.

**Nick V Ruello, Principal
Ruello & Associates Pty Ltd**

Acronyms and Terminology

ABS	Australian Bureau of Statistics
ASIC	Australian Seafood Industry Council
BRS	Bureau Of Rural Sciences
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EMS	Environmental Management System
FRDC	Fisheries Research and Development Corporation
f/s	fish and seafood
MWFM	Melbourne Wholesale Fish Market
NAC	National Aquaculture Council
NSCS	National Seafood Consumption Study
SCM	Supply Chain Management
SSA	Seafood Service Australia
SIV	Seafood Industry Victoria
WIN	Womens Industry Network

Terminology

In following with the 1991 NSCS report, the term ***fish*** is used in this report to differentiate finfish from crustaceans and molluscs and other animals which are referred to here as **seafood**, unless otherwise indicated.

The term ***fishmongers*** in this volume refers to retail fish shops and retail market outlets which derive most of their income from the sale of fresh and frozen fish and seafood.

Supply Chain Management. This is a business strategy where the whole chain is seen as the competitive unit, instead of the individual firms within it. By working together on, and building better relationships between the partners in the chain they create more value for others in the chain and greater consumer satisfaction (after Professor R Collins, University of Queensland, Gatton, in AFFA 2002).

Non Technical Summary

This volume documents the findings of a retail trade sales and attitudes survey of a total of 120 supermarket, fishmongers and fish and chips outlets. Volume two has the findings from five focus group discussions and a total of 1005 face to face consumer interviews. The overall implications and general discussion, conclusions and recommendations from the entire project are discussed here in volume one.

Melbourne's per capita consumption of fish and seafood in and out of home increased 8.3% from 11.5kg to 12.5 kg since the 1991 National Seafood Consumption Study; in home consumption rose 2.3% to 7.8kg while out home consumption rose 19.6% to 4.7 kg per person. Sydney's per capita consumption was estimated as 15.1 kg in 1999 while Perth's was 14.7kg; both cities experienced stronger growth in out of home consumption by 1999 than Melbourne has to date.

Ninety seven percent of Melbournians had eaten fish or seafood in the last year; 62% had eaten fish/seafood in home in the preceding week while 27% had eaten it out of home. There was a direct correlation between the incidence of eating fish/seafood out of home and household income.

Fish was widely seen as a healthy food and most strongly associated with an entertaining entrée, but not regarded as an everyday meal, and too dear to be eaten more often. The adding of variety to the diet, the health attributes of fish and the pleasing taste were the main attractions while a lack of confidence in buying and preparing fish and seafood, and price, were the key factors constraining sales for in home consumption, but the lack of confidence contributed to the out of home consumption growth. Fish, and more so seafood, was seen as something of a tasty treat or indulgence when eating out.

The 40-59 years old "baby boomers" had the greatest combined in and out of home consumption while the lowest consumption volume was found in the 15 to 19 years old; this is a reflection of the baby boomers' higher disposable income and partly a desire for the health benefits of eating fish while the young see little or no benefit at their age despite an awareness of the health attributes of eating fish. Nonetheless fried fish remains far more popular than the healthier grilled and steamed meals.

These findings indicate that the health benefits of fish are best used as background or a secondary theme in generic promotional campaigns. The enjoyment of a tasty treat, "something different" from the wide variety of fish/seafood available are more common sales drivers and therefore warrant prominence.

Canned fish continues to be the most common fish item sold accounting for 36% of purchases in Melbourne; canned fish's popularity, particularly tuna, is attributable to its widespread availability and enjoyment by family and friends, quick and easy versatility, low price and perceived high value. Flake remains Melbourne's most common fresh fish purchase, being number one in fish and chips outlets, while flathead and farmed Atlantic salmon are the next equal best sellers, being main sellers in supermarkets and fishmongers.

More than 70% of consumers do not consider a fish's wild or farmed habitat when making a purchase decision. Atlantic salmon has moved from zero to hero status since 1991 in helping Australian aquaculture's contribution to fish and seafood retail supply rise to 25% for supermarkets and 21% for fishmongers. While prawns are Melbourne's best selling seafood farmed prawns have made little inroad, principally because they receive little promotion. Mussels are inexpensive, well known and widely liked and are identified as Victorian aquaculture's most promising produce for increased sales in Melbourne and elsewhere.

Pollution, food contamination and safety continue to concern consumers, especially recent publicity about high mercury levels in fish and the safety of imported prawns: 11% of interviewees indicated that bad media regarding seafood contaminants had led to a reduction in their consumption.

Most consumers have little knowledge on how Australian fisheries and aquaculture are regulated by government but are generally supportive of the concept of ecologically sustainable fisheries and ecolabelling such as that offered by the Marine Stewardship Council. It appears that about one in three would be prepared to pay 10% more for fish if *they could be assured* that it comes from a well managed ecologically sustainable fishery; the issue of trust and confidence in a certifying body, and the industry, was seen as critical to the acceptance and success of ecolabelling.

Restaurants now account for 29% of Melbourne's out of home seafood meals compared to 39% in 1991. A trend to more frequent eating out at mid price eateries such as cafés, smart fish and chips outlets and inexpensive restaurants, was noted in the Sydney and Perth studies too. This suggests that the price of fish remains an issue for out of home eating too which favours the prospects of the cheaper larger species of farmed fish species which lend themselves to fillet production.

The total value of Melbourne's retail sales of fresh seafood by supermarkets, fishmongers and fish and chips outlets in 2004/05 was estimated at about \$270 million. Concerns about fish species substitution and uncertainty on whether fish labelled fresh had not previously been frozen continue to undermine consumer confidence and trust in the industry and act as significant impediments to the market success of ecolabelling, new packaging developments and sales growth generally.

The supermarket sector's share of the fresh fish/seafood category has risen to 32% from 16% in 1991; this growth has come mainly at the expense of the specialist fishmonger outlets who now have 51% of sales volume, down from the 65% enjoyed in 1991. This has come about because of the more customer oriented, innovative and energetic approach of the supermarket chains.

Almost 40% of consumers surveyed would like to see more fresh local seafood available to buy rather than see less local seafood available to allow for an increase in recreational fishing, while 7% would prefer more fish made available for recreational fishing. Slightly more than 40% felt that it was about right as it is now (12% did not know).

Consumers recognise the benefits to the local economy when they buy Australian produce and believe that some imports may not be as good as local fish. About seven out of ten like to buy familiar species and prefer Australian to imports but focus group discussion indicated that only a small minority were prepared to pay about 10% more for Australian seafood products. These findings point to the need for producers and retailers to consistently deliver on the promise of higher quality from Australian produce particularly if it carries a premium price.

A detailed analysis of Melbourne consumer attitudes identified five market segments in the population with different demographics and consumption patterns. Most of these market segments can be served profitably with targeted market development initiatives. Mass marketing or generic promotion can best be used to raise consumer confidence and trust and the demand for inexpensive species with a high consumer acceptance such as several wild and farmed species as identified in this study.

The Victorian seafood supply chain, particularly the retail sector, needs strengthening with greater communication flow and business knowledge to work effectively boosting confidence in the Australian industry. With a more collaborative effort all sectors can fund market and product development and the dissemination of quick and easy, meal ideas to increase retail sales and consumer satisfaction in a more profitable manner.

1. Introduction

1.1 Background

The retail sale and consumption of seafood in Melbourne was last examined in 1991 as part of the National Seafood Consumption Study (NSCS) undertaken by a consortium of consultants for the Fisheries Research and Development Corporation (FRDC 1992). This study has far less relevance now because of the enormous changes in food consumption and marketing and the economic environment in Australia since then.

In 1999 the Fisheries Research and Development Corporation and various industry organizations provided funding for a repeat seafood consumption study in Sydney and Perth (Ruello & Associates 1999, 2000). Since then various Victorian industry organizations and government agencies have been seeking up to date information on seafood consumption in Melbourne from Ruello & Associates.

So in 2003 the company was encouraged by fishers, farmers, retailers and others in the supply chain to lodge an application for Research & Development funding with the FRDC to undertake a new study on the retail sale and consumption of seafood in Melbourne to provide up to date information for Melbourne and complement the Sydney and Perth studies of 1999. This encouragement included offers of cash contributions from a number of industry members and government agencies.

The Victorian Fisheries Research Advisory Body had expressed an interest in supply chain management in its advertisement for preliminary research proposals in 2004 and this subject was therefore added in the final application to the FRDC.

The Melbourne study was designed along the same methodology as that developed in the national study and the Sydney and Perth so that trends and changes since 1991 could be examined, and where relevant and possible, compared across these cities.

The study had two major parts: the retail trade study which is reported here in Volume I and a qualitative and quantitative consumer study of fish consumption, purchasing and consumer attitudes which is reported in Volume II. The overall findings and implications, general discussion, conclusions and recommendations from the entire project are presented here in volume one.

Readers primarily interested in an overview of the study may start reading the Results chapter at section 4.4 then proceed with the chapters on General Discussion, Recommendations and Conclusions and leave the detailed findings from the three retailer surveys (Section 4.1 to 4.3) for last. Other readers, especially those with a particular interest in retail trade, may find it more rewarding to just read the report in the usual manner following the numerical sequence of chapters.

1.2 Need For The Study

Many seafood retailers, wholesalers and importers had approached Ruello & Associates over the past few years for information on aggregate retail sales, main species consumed in home and out of home and Melbourne consumer attitudes to various factors. However these persons could only be referred to the 1992 report on the national seafood consumption study for assistance.

This situation was not satisfactory for government nor industry since there had clearly been many changes in Melbourne since 1991 and the Sydney study of 1999 had little quantitative data relevant to the Melbourne scene.

Up to date market and consumer information was needed to underpin the various species and industry Research & Development plans and strategies that were being planned and to provide reliable trade information (qualitative and quantitative) for government agencies and committees developing fisheries and aquaculture management plans.

Given the many changes in eating habits and the business environment (general food supply and demand, introduction of more aquaculture species and others) over the past decade or so there was a need for detailed reliable information on the retail sales and consumption of seafood in Melbourne to guide the whole supply chain, on consumer wants and attitudes.

The changes in the ethnic mix of retailers and greater use of imported species by these retailers and their customers also warranted research. Industry also needed the data to make better use of a few underutilised species as well as the better known species.

There was also a growing need to examine Melbourne consumers' attitudes to aquaculture and commercial fishing activities, food safety, environmental issues and ecolabelling (which were all gaining much media attention) and their likely influence on seafood sales.

2. Objectives

The project objectives were :

1. To measure the quantity and species/types of seafood consumed in home and out of home.
2. To document consumer attitudes to key factors affecting seafood purchases and consumption.
3. To gather reliable information on the species, source and volume of seafood sold by various types of retail outlets.
4. Examine and document retailers' purchases, behaviour and attitudes to key factors (eg wild/farmed).
5. Examine and document the supply chain management from Victorian fishers and farmers to retailer and consumer.
6. Propose actions that can be taken individually and collaboratively by fishers, farmers and others in the supply chain to increase retail sales and consumer satisfaction in a more profitable manner.

3. Methodology

The methodology employed in this study parallels those of the 1991 National Seafood Consumption Study (Fisheries R & D Corporation 1992), the 1999 Sydney retail sale and consumption study and the 1999 seafood consumption study in Perth so that wherever possible comparisons could be made with the findings in the earlier studies.

A total of 120 personal (face to face) interviews were conducted with three categories of retail outlets as shown below.

40 ***Supermarket/food retail*** : Supermarkets (major chains and independent), food stores (eg Foodworks) and convenience stores (7-11 etc)

40 ***Fish and chips/takeaway*** outlets (Fish and chips : selling mainly cooked hot fish and seafood product. Takeaway: selling mainly a wide variety of hot foods)

40 ***Fishmongers*** (retail fish markets and fish shops mainly selling fresh and frozen seafood)

Category of business	Description	Sample (No. of outlets)
<i>Supermarket/ food retail</i>	Supermarkets	22
	Food stores	9
	Convenience stores	9
<i>Fish and chips /takeaway</i>	Fish and chips outlets	28
	Takeaway stores	12
<i>Fishmonger</i>	Fish shops	33
	Retail fish markets	7

The outlets were randomly selected from the Melbourne 2004 phone listings of the various classifications.

Interviews were sought with the person with the greatest knowledge of seafood buying and selling for the business. This was usually the owner/manager in the fishmonger and fish and chips outlets and the seafood section manager in the other retail stores

The questionnaires for each of the three retail outlet categories are based on those used in 1991 but were modified in the light of obvious changes in industry and the need to pursue new issues.

The three questionnaires are similar for the most part but each has several unique questions not found in the others. A copy of each questionnaire is in the Appendix.

All retailer interviews were conducted in September –October 2004 and interviewees asked for information on average weekly purchases and sales value over the summer and winter.

The results in this volume have been presented so that they can easily be compared with those from the earlier studies, wherever possible. However care should be taken in comparing or extrapolating information from the earlier studies because the 1999 consumer surveys only covered two quarters (and not the four seasons and were not designed to measure annual fish consumption).

All weights/volumes in this volume of the report refer to purchased weight, unless otherwise indicated.

Supply Chain Discussions

Fifteen persons working in some capacity across the Victorian seafood supply chain were consulted for a face to face or telephone discussion on the operation of the supply chain. The respondents included one or more: fisher, fish farmer, mollusc farmer, feed supplier, transport operator, auction agent, MWFM provedore-wholesaler cooperative manager, MWFM administrator, importer, suburban wholesaler, supermarket buyer and consumer and were selected to provide a broad coverage of the chain.

These discussion were structured to explore areas pertinent to the interviewees business but were commonly based on six key supply chain management principles:

- Focus on customers and consumers
- Creating and sharing value
- Getting the product right
- Ensuring effective logistics and distribution
- Having an information and communication strategy
- Building effective relationships

In addition, with several retailers discussion was extended at the end of the scheduled interview on retail sales and attitudes to canvass their observations on the supply chain.

4. Results and Discussion

4.1. Findings From Supermarkets/Food Retailer Survey

This section describes the data gathered from interviews with the key person (“seafood business manager”) in **40** stores in the retail food sector: i.e. supermarkets, food stores and convenience stores.

The sale of fish and seafood in the *supermarket* category of retailers in 2004/5 was mostly restricted to product displayed in the delicatessen section where some level of in-store service is provided. These displays offered fresh fish and seafood, frozen fish as well as “chilled” fish and seafood ie thawed out frozen product.

In most *food stores* the sale of fish was limited to tray-wrapped fresh fish, tray-wrapped *chilled* fish, wrapped fresh sliced smoked fish, and sometimes frozen fish and seafood. *Convenience* stores mostly sold a very limited volume of frozen fish.

As with the 1991 NSCS, this study on the supermarket/food sector focuses on the sale of fresh, chilled and frozen fish and seafood; *it deals only with minimally processed frozen product such as raw fillets, cooked prawn meat etc not the highly transformed products such as fish fingers.*

4.1.1 Respondents’ Position In Store (Q 1)

A total of **40** persons from 22 supermarkets, nine food stores and nine convenience stores were interviewed for this study. The respondents held a diverse range of positions and titles as shown in the following table.

Table 4.1.1. Position of the respondents

Owner/Manager	Store Manager	Fish/Seafood Department Manager/Team Leader	Deli Manager/Team Leader
9	6	2	23

The food stores tended to be smaller businesses, often owner-operated and hence did not have special positions or titles for the management of fish sales.

Of the 40 persons interviewed, 57.5% were Deli Managers or Deli Team Leaders, with Store Managers comprising only 15% of the respondents. It is notable that 22.5% of the respondents were the store owners; these respondents were predominantly from the smaller food stores.

seafood while only 30% were able to choose their frozen fish supplier; others were reliant on State head office seafood buyers. This compares to 60% and 50% respectively in 1991.

In Melbourne today the fish sales area is commonly the responsibility of the person responsible for the Delicatessen department. Only two interviewees (5%) held a designated position of seafood section manager.

In the 1991 NSCS there were no interviewees with the special responsibility for fish and seafood sales, reflecting the low value of such sales at that time.

4.1.2 Retailer Perception Of Alternate Protein Products (Q 3)

The perceptions of food retailers about the saleability of different food products such as poultry, meat, pork and fish have an influence on how they sell these various products and hence these perceptions were analysed in Question 3.

Respondents were asked which food type each particular statement might apply to: they could nominate none, one, or as many as they believed to be true. The results are represented graphically in the perception map in Figure 4.1.2.

Fish was most closely associated with the statements:

- *Needs more consumer marketing support*
- *Customers request more information about its presentation or cooking*
- *Needs more trade marketing support*

Fish was not associated with positive attributes such as *Preferred by more of my customers* which was most closely associated with meat, or *Offers the customer good value for money*, which was most closely associated with poultry. Fish was more closely associated with *It is considered too dear by customers.*

This is almost identical to the picture found in the NSCS in 1991 and in Sydney in 1999 when the same three statements were amongst the four most closely associated with fish. In 1991 the map derived from retailers data from across all the capital cities showed the strongest association with :

- *Our staff don't have the knowledge to recommend it to customers.*

The current study found that (a lack of) staff knowledge is still regarded as a major impediment to fish sales because this statement was seen to be true for fish by approximately one in four respondents, an incidence at least three times greater than that for the other protein foods (Table 4.1.2)

Many interviewees commented that they do not receive any formal training on fish and seafood and often know very little and hence are unable to make any recommendations to their customers.

A small number of deli managers commented that they disliked seafood themselves and thought of it as a smelly product to handle. These interviewees had not tasted any of the fish or seafood sold in their counters and relied on other staff or their fish supplier for information to be able to recommend certain products.

All of these comments point to a need for a greater flow of information from the seafood industry to its customers and from retailers onto consumers.

Figure 4.1.2. Perceptual map of retailers’ attitudes to protein sources

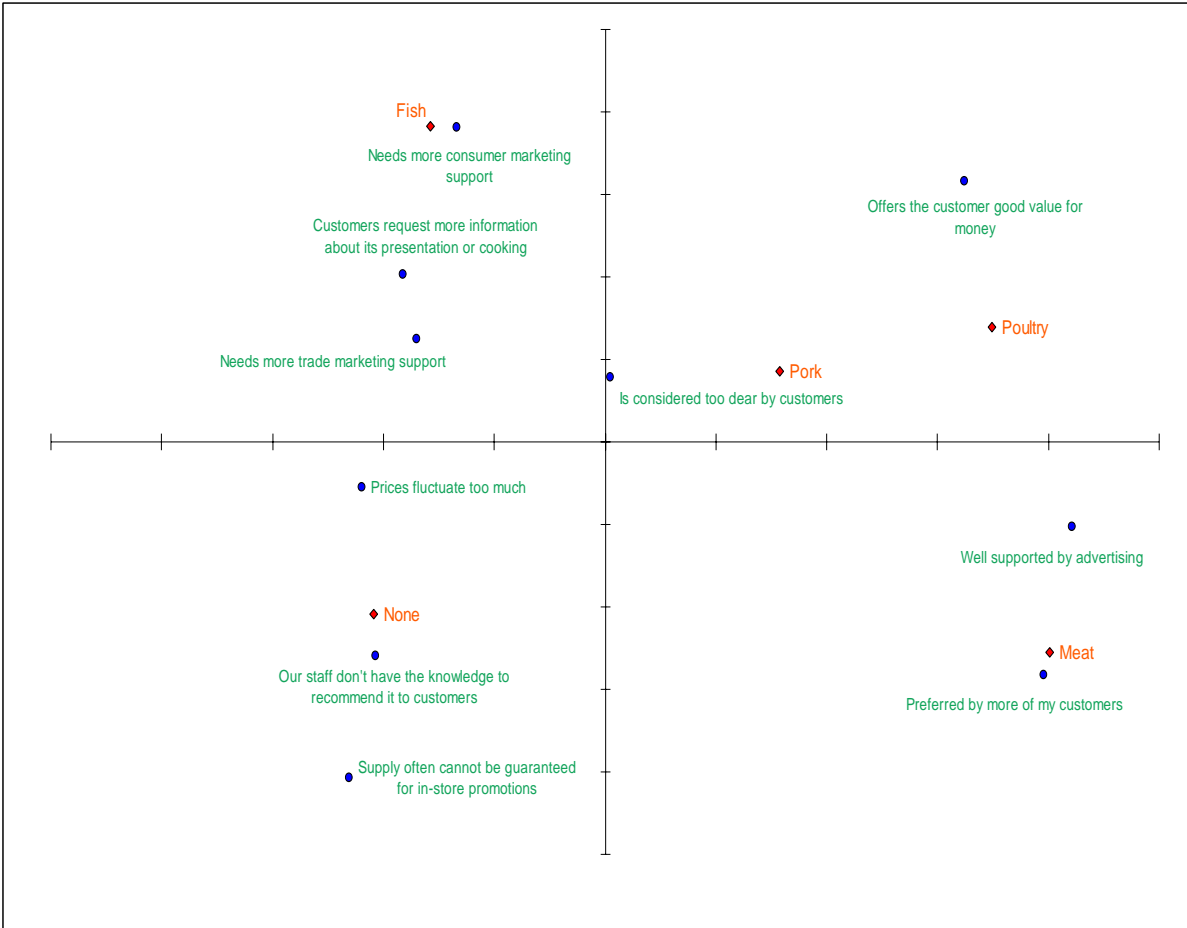


Table 4.1.2 Percentage agreement with statement on protein sources
 (Multiple responses allowed for each protein means that percentages in columns may exceed 100%)

Statement / Factor	Meat	Pork	Poultry	Fish	None
1. Well supported by advertising	32%	15%	30%	8%	14%
Supply often cannot be					
2. guaranteed for in-store promotions	5%	7%	5%	12%	71%
3. Offers the customer good value for money	13%	13%	43%	18%	13%
4. Needs more consumer marketing support	6%	4%	12%	43%	35%
5. Needs more trade marketing support	6%	6%	8%	33%	46%
Customers request more					
6. information about its presentation or cooking	4%	6%	9%	36%	45%
Our staff don't have the					
7. knowledge to recommend it to customers	6%	6%	6%	18%	63%
8. Is considered too dear by customers	15%	6%	15%	28%	36%
9. Preferred by more of my customers	36%	2%	32%	6%	23%
10. Prices fluctuate too much	4%	2%	9%	27%	58%

4.1.3 Stores Selling Fresh/Chilled and Frozen Fish and Seafood (Q 4a, 4b)

Twenty nine (72.5%) of the stores surveyed — all supermarket or food stores — sold fresh/chilled fish and seafood. Twenty nine of the 40 stores also sold frozen fish and seafood, while seven stores (17.5%) sold only frozen fish and seafood.

Only twenty two (55%) of the stores surveyed sold fresh/chilled as well as frozen fish/seafood, these were all members of a large chain supermarket.

Most of the food stores and convenience stores did not sell any fish or seafood and made up the remaining 27.5% of the stores surveyed that did not sell fish and seafood.

Those stores selling fish and seafood were asked what they believed were the *main problems* in supplying and selling each category, and to describe their problems if there were any.

Table 4.1.3 Number of stores selling fresh/chilled and frozen fish and seafood and the number reporting main problems.

Question	Yes	No	Respondents
Is <i>fresh/chilled</i> fish or seafood sold?	29	11	40
Do you experience problems in supplying and selling <i>fresh/chilled</i> fish or seafood?	22	7	29
Is frozen fish or seafood sold?	29	11	40
Do you experience problems in supplying and selling frozen fish or seafood?	1	28	29

Only seven of 29 stores selling fresh/chilled seafood (24%) reported that they had any *main problems* selling it. This is remarkably similar to the 25% recorded in Sydney in 1999 and 28% in Melbourne 1991.

4.1.4 Main Problems in Selling Fresh/Chilled Fish and Seafood (Q 4b)

The 22 comments on problems in selling fresh/chilled seafood from the 29 stores selling fresh/chilled fell into ten categories, as shown below, the other seven “fresh/chilled fish sellers” (24%) had no *main problems*.

The high price of fresh fish and the limited range available for sale were clearly the two main problems. Interviewees reported that regular customers quickly tired of the range offered but they were unable to order small quantities of additional species to extend their range in a profitable manner because wholesalers were reluctant to offer less than 5 kilogram lots. A 5 kg. lot on first attempt was seen as too risky for a new species or product.

Table 4.1.4 Main problems in supplying and selling fresh fish and seafood cited by retailers.

Problem	Number of mentions
Difficulty in getting a full range	5
Fresh fish is often too expensive to sell	5
Slow turn over	2
Minimum amount that can be ordered from a wholesale is too great	2
Prices vary too much between suppliers	1
Quality is not always good	1
Effect of weather on supplies	1
Cannot get enough fresh prawns and oysters at Christmas and Easter	1
Lack of agreed marketing names for fish	1
Lack of any fish authority to speak out to counter bad publicity (such as mercury in fish)	1
Difficulty thawing and selling lots of 10 kg frozen fish	1

The *main problems* described in this survey contrast with those of the 1991 and 1999 surveys where the short shelf life of fresh fish was cited as the main problem.

One interviewee reported that more of her customers requested the product in the *frozen form*, not thawed, and whenever they could, the customer was given frozen product: however chilled product had to be on display as it was a *catalogue* item. (A *catalogue* item being one that is displayed in the store’s weekly catalogue as being available at the store).

4.1.5 Main Problems in Selling Frozen Fish and Seafood (Q 4b)

Only one of the 27 stores selling frozen product (4%) had any *main problem* in the supply and sale of frozen fish and seafood. The problem was the lack of variety and the consequent predictability of the product on sale. The manager reported that her customers were actually looking for frozen product and more than the few lines offered by her store.

A lack of variety was the only reply/comment, from one respondent. The almost total lack of main problems with selling frozen product (96% of stores) is an improvement on Melbourne in 1991 when only 61% of stores were in such a position.

There was no widespread problem in Melbourne in 1991 but individual interviewees reported a range of issues including supply shortage/unreliable supply and short shelf life. Melbourne fish suppliers seem to have overcome any major difficulties with supply to supermarkets.

4.1.6 Main Reasons For Not Selling Fresh Fish And Seafood (Q 4d)

Many stores in Melbourne were not selling fresh fish and seafood because it was felt that there was no customer demand for it in the particular store (Table 4.1.6).

Table 4.1.6 Respondents' main reasons for not selling fresh fish.

Reason	Number of citations
No customer demand	4
Customers do not expect to find fish in this type of store	3
Display area is limited	3
Fish is too difficult to look after	2
No fish when I bought the business and have not considered including fish in my range of fresh foods	1
Next door is a butcher who sells fish. No point in competing	1
Don't really know how to go about introducing fresh and frozen fish into my display	1
When I displayed fresh fish it just 'sat there' and had to be thrown out	1

These responses are almost a reverse of the findings in 1991. The previous Melbourne study cited reasons such as the perishability of the item, and the lack of space as the primary reasons with no demand as a secondary reason. Lack of space and perishability were mentioned in this study as secondary reasons while lack of demand was the clearly the dominant reason.

“Customers can buy fresh fish at the large supermarkets”, encapsulates a common belief of small supermarket and food store operators.

The majority of these interviewees (often owners of these stores) had only been in business for less than two years, and seem to have little interest or understanding of the retailing of fish, seeing it as a specialised retail activity, beyond their knowledge or range of skills. They may represent a business opportunity for wholesalers prepared to invest in educating these food retailers about the costs and benefits of retailing fresh fish and seafood.

4.1.7 Main Reasons For Not selling Frozen Fish/Seafood (Q 4d)

The common reason cited for not selling frozen fish and seafood was that the interviewees felt that there was no demand for this type of product in their business. This comment is consistent with their reasons for not selling fresh fish and seafood. Frozen fish is considered by the interviewees as an unattractive and a less profitable line in their store when compared to the branded packaged processed seafood products that they sell readily.

Table 4.1.7 Main reasons for not supplying and selling frozen fish

Reason	Number of citations
No customer demand	4
Display area is limited	3
No fish when I bought the business	2
Next door is a butcher who sells fish. No point in competing	2
Don't really know how to go about introducing frozen fish into my display	1

The reasons given for not selling frozen fish in this survey parallel reasons given in the 1991 Melbourne and 1999 Sydney studies. Lack of customer demand and lack of space remain the main reasons.

However, it is important to recall that most supermarkets selling frozen fish experienced no problems (Section 4.1.5), which suggests that customers are shopping for their frozen fish in the larger supermarkets, which have evidently overcome any difficulties in selling frozen fish.

A significant difference between fish retailing in Melbourne and Sydney is that butchers in Melbourne can sell fresh and frozen fish, and close proximity to a butcher shop was cited as a reason for not selling fresh or frozen fish by several small supermarkets and convenience stores.

4.1.8 What Would Encourage The Store To Sell Fresh Or Frozen Fish (Q 4e)

Interviewees from stores that did not sell fish and seafood were asked what would encourage them to stock and sell fresh and/or frozen fish and seafood.

The most common reason cited in regard to fresh was “a significant increase in demand” (four mentions or 36% of respondents). The second most common answer regarding fresh and the outstanding answer in regard to frozen was that “nothing” would encourage them to add fish and seafood to their product range (Table below).

Table 4.1.8a Encouragement needed to stock and sell fresh and frozen fish/seafood (number of mentions and percentage of respondents).

Encouragement needed	Fresh	Frozen
Significant increase in customer demand	4 (36%)	1 (9%)
Nothing	3 (27%)	9 (81%)
Solve the packaging and shelf-life problems	2 (18%)	0
Price would have to fall	1 (9%)	0
Lack of reliable suppliers (wholesalers)	1 (9%)	1 (9%)

These findings however are not unlike those of 1991 (shown below) when *nothing* and *increased customer demand* were also the two most common responses. These were two of the three most common responses in Sydney in 1999.

Table 4.1.8b Encouragement needed to stock and sell fresh and frozen. 1991.

Encouragement needed	1991	Fresh	Frozen
Significant increase in customer demand		23%	25%
Nothing		49%	56%

The data above suggest that the seafood industry would have to work hard to persuade many of these operators to sell fish and seafood. However comments such as “I would stock fresh fish if it was packaged with the shelf life of fresh meat” suggests a change in attitude to fresh fish if attainable. It is also noteworthy that the Aldi supermarket chain is selling just two tray-wrapped lines of fresh fish.

4.1.9 Fish And Seafood Buy/Sell Statistics (Q.7a)

The purchase volume of the top ten products (six main fish types and four main seafood) averaged 145 kg per week and these main sellers represented 80% of the aggregate sales (all species/products) on average, as shown in Table 4.1.9 below. These figures are the volumes bought rather than sold because some fish are sold after filleting in house and the disposal of waste (more than half of the fish volume bought in some species); there is also loss when unsold fish is thrown out (shrinkage”).

Table 4.1.9 Main fish and seafood buy/sell statistics

Stores selling f/s (29 stores)	Average	High	Low
Weekly purchase volume of 6 main fish sales (kg)	102	529	2
Weekly purchase volume of 4 main seafood sales	43	135	0*
Total fish & seafood (top 10)	145		

* Four of the 29 stores selling fish did not sell seafood

Stores selling f/s (29 stores)	Average	High	Low
Proportion of total sales accounted for by main 6 & 4	80%	100%	40%

\$ Sales Value per week	Average	High	Low
Stores selling f/s (29 stores)	3020	12,500	50
All 40 stores	2265	12,500	0

The average weekly fish and seafood sales value for stores selling fish and seafood was \$3020 while the weekly sales average across all 40 stores (including those not selling fish and seafood) was \$2265.

The average weekly sales value for stores selling fish and seafood was \$611 in 1991 so there has been an increase of some 394% in the average weekly value in the intervening period. This strong increase is mostly the result of the increased range and volume of fish sold by supermarkets and food stores and not just inflationary increase in fish prices (Appendix 3).

Similar changes were noted in supermarket category sales in Sydney when an increase of 386%(to \$3540 per week average sale) was recorded between 1991 and 1999.

4.1.10 Main Fish Species Purchase Volumes (Q. 7a)

Blue grenadier (also known as hoki, the New Zealand name) was the most common of the main six fish species sold but it was far surpassed by Atlantic Salmon (fish as well as steaks and portions) as the species with the highest average sales per store and highest aggregate volume from these stores. Table 4.1.10 below summarises the data on weekly purchase volumes of all the species nominated as the six main sellers.

Table 4.1.10 Weekly purchase volume statistics for main fish species

Species/product	Number of shops*	Total volume# (Kg)	Average* volume (Kg)	Low volume (Kg)	High Volume (Kg)
Barracouta	1	5	5	5	5
Basa	9	227	25	14	60
Cod Smoked	19	286	15	2	35
Dory	1	20	20	20	20
Fish Crumbed	3	167	56	7	112
Flathead	12	240	20	3	68
Grenadier Blue	21	432	21	5	80
Hake	1	10	10	10	10
Ling	2	128	64	58	70
Mackerel Smoked	1	1	1	1	1
Perch Nile	14	198	14	1	33
Roughy Orange	1	26	26	26	26
Salmon Atlantic	7	364	52	6	259
Salmon Atl. Portion/Stk	6	333	56	20	128
Salmon Smoked	8	120	15	1	50
Shark	10	126	13	3	23
Shark Crumb / Batter	2	15	8	5	10
Swordfish	1	38	38	38	38
Trout Smoked	3	9	3	1	5
Tuna	1	80	80	80	80
Warehou	4	89	22	3	56
Whiting	3	25	8	5	10
Whiting Blue	2	23	11	3	20

* The average is based on a variable number of shops so caution may be needed with some averages.

The total weekly sales of the 40 stores would be higher than the figure listed here because the species may be sold regularly but not be one of the six main sellers for the store.

Blue grenadier was the sixth most common best seller in 1991 when it was a relative newcomer to the Australian table; Atlantic salmon too was a new product in 1991 and did not make the top ten of any list. These two species have also enjoyed similar success in Sydney since 1991.

Smoked cod is ranked second according to its frequency as a top six main seller although it does not make the top six in terms of average sales per store. Smoked cod (actually a smoked hake fillet) was the third most common main seller and its average weekly sales were amongst the top three in Melbourne in 1991 but it has lost a lot of its appeal in both Melbourne and elsewhere over the years since then. Smoked cod is widely perceived in the seafood trade as an older style of seafood product appealing to a diminishing number of ageing consumers of Anglo Saxon descent.

Other noteworthy species in Table 4.1.10 are shark, orange roughy, Nile perch and basa (a farmed catfish fillet from Vietnam), which are all sold as fillets. Shark was the most common of the main types of fish with strong average sales across all stores in 1991 but it has fallen in popularity although sales figures still remain strong in some stores. Orange roughy too was a popular fish in 1991 but has fallen both in popularity and in average sales per store in Melbourne and Sydney because of massive price rises as a result of reduced landings.

The decline in shark sales are reported by several retailers as related to the importation of Nile perch in the 1990s and of basa in the 2000s, both skinless boneless fillets like shark but much cheaper.

Of interest is the entry of swordfish and tuna to the list of main types of fish sold in supermarkets in Melbourne (Table 4.1.10). In Sydney in 1999 swordfish and tuna sales were strong in fishmongers but were still negligible in supermarkets and so not in the list of main types for supermarket/food stores.

The results overall point to increasingly strong sales of imported skinless boneless fillets, Tasmanian Atlantic salmon fillets, portions and steaks and moderate demand for more expensive lines such as swordfish and tuna.

4.1.11 Reasons For Buying /Selling Main Species (Q 5a)

Many reasons were given for certain species being supplied and sold. In supermarkets in higher socio-economic areas, fresh fish outsold frozen fish and customers were particularly looking for fresh fish. In some areas the price of the fish was reported as of little consequence, as long as the fish looked really fresh. In other areas, customers bought the fresh fish when it was on special only and significant savings were obvious.

In the lower socio-economic areas frozen fish sold better than in better off areas, reportedly because customers were looking for savings and specials.

Table 4.1.11 Main types of finfish bought/sold and reasons cited.

Type of Fish	Reasons
Basa	Tasty fish; well recommended by staff; holds together well, mild flavour; looks good; has white, thick fillets.
Blue Whiting	Cheap
Blue Grenadier	Sells well when cheap < \$12/kg; often a fresh fish; attractive white fillets
Crumbed Hake	Cheap
Dory fillets	Small fillet size; individual serves not too expensive
Flake	Cheap boneless, sometimes fresh
Pearl Flake	Cheap boneless
Flathead	Skinless & boneless: when cheap sells well; fresh fish; well known; looks good when fresh.
Nile Perch	Cheap
Ling	Attractive, fresh fillet; thick and white; boneless.
Smoked salmon	Cheap at this store
Salmon Portions	Not cheap but sells well: usually a consistent price unless on special. Considered well known, customers know how to cook it; looks good when fresh; good colour.
Smoked Cod	Cheap; popular with older customers; boneless.
Orange Roughy	When fresh sells well: price is not a big issue if the fish looks really fresh.
Salmon Whole	Popular as an entertaining fish
Snapper	Dinner party fish
Swordfish	When fresh sells well: price is not such a big issue if the fish looks really fresh.
Tuna	When fresh sells well: price is not such a big issue if the fish looks really fresh.

The key sales driver in lower socio economic areas was price, but value for money was a common sales driver in all geographical areas and product (fresh and frozen). Most respondents noted that it is important that fresh fish is well known, in fillet form, boneless, preferably not expensive and look really fresh if it is to sell in substantial volume.

All respondents said that fish sells really well when it is on special, and customers have learned that there is at least one “fish” price special every week. It was noted by many interviewees that the sales volumes in the supermarket varies considerably from week to week in response to a particular price special, especially those on a skinless boneless fillet such as Nile perch.

Most of the managers interviewed reported that they do not have the time to talk to customers often and hence have a better understanding of what sells well rather than *why* these species/products sell well in preference to others.

The findings overall suggest that supermarkets can sell some of the higher priced fish species too and not just the cheaper fillets if the product display and staff are welcoming ie customers respond when they perceive value in the seafood offering.

4.1.12 Fish Form Purchased

Almost all of the fish purchased is sourced and sold in the fillet form (Table 4.12) the form preferred by most consumers today. The notable exceptions are the smoked mackerel and smoked trout which are small plate sized fish. Flathead is a locally caught fish that is sometimes available as a plate size whole fish.

Atlantic salmon is bought in a variety of forms as gilled and gutted fish, steaks (cutlets) or portions of fillet but the whole fish is cut in store and invariably sold as fillets or smaller cuts.

Table 4.1.12 Fish form purchase volumes

Species	Total volume (Kg)	Live	Whole	Fillet	Cutlet	Headed & gutted	Other
Barracouta	5	0%	0%	100%	0%	0%	0%
Basa	227	0%	0%	100%	0%	0%	0%
Cod Smoked	286	0%	1%	99%	0%	0%	0%
Dory	20	0%	0%	100%	0%	0%	0%
Fish Crumbed	167	0%	0%	96%	0%	0%	4%
Flathead	240	0%	0%	86%	0%	0%	14%
Grenadier Blue	432	0%	0%	93%	0%	0%	7%
Hake	10	0%	0%	100%	0%	0%	0%
Ling	128	0%	0%	100%	0%	0%	0%
Mackerel Smoked	1	0%	100%	0%	0%	0%	0%
Perch Nile	198	0%	0%	100%	0%	0%	0%
Roughy Orange	26	0%	0%	100%	0%	0%	0%
Salmon Atlantic	364	0%	0%	48%	28%	0%	24%
Salmon Atl Portion / Stk	333	0%	38%	48%	8%	0%	6%
Salmon Smoked	120	0%	1%	96%	0%	0%	4%
Shark	126	0%	0%	100%	0%	0%	0%
Shark Crumb / Batter	15	0%	0%	100%	0%	0%	0%
Swordfish	38	0%	0%	100%	0%	0%	0%
Trout Smoked	9	0%	100%	0%	0%	0%	0%
Tuna	80	0%	0%	100%	0%	0%	0%
Warehou	89	0%	0%	98%	2%	0%	0%
Whiting	25	0%	0%	100%	0%	0%	0%
Whiting Blue	23	0%	0%	100%	0%	0%	0%

Fillets dominated trade in Melbourne supermarkets in 1991 too but in the years since there has been a trend to sell boneless fillets and so boneless flathead fillets are commonly available today while they were rare or cut to order in 1991.

4.1.13 Main Seafood Purchase Volumes

The greatest development since 1991 has been the range extension of seafood products, this is best evidenced by the decline in frequency of supermarkets selling fish but no seafood products, from 42% to 17% in 2004. Also noteworthy is the presence of farmed tiger prawns in the list of main seafood types tabled below.

Seafood extender (sometimes called flakes or highlighter) a fish based manufactured product is the outstanding seafood product (Table 4.1.13) because of its wide popularity and the volume sold per store. This is in stark contrast to 1991 when this seafood was a best seller for one Melbourne store only and seafood sticks were very popular.

4.13 Main seafood weekly purchase volumes

Species	Number of shops*	Total volume (Kg)	Average* volume (Kg)	Low volume (Kg)	High Volume (Kg)
Extender	19	350	18	5	40
Lobster	3	10	3	2	6
Marinara	5	62	12	2	35
Oysters (dozens)	6	227	38	15	79
Prawn Cooked	5	74	15	5	28
Prawn Cooked Ring	4	16	4	4	5
Prawn Cooked Tiger	3	24	8	6	10
Prawn Green	5	70	14	5	30
Prawn Meat / Cutlet	5	45	9	2	30
Scallops	3	67	22	12	40
Squid	2	6	3	3	3
Squid Ring Crumbed	1	5	5	5	5
Squid Rings / Tubes	3	63	21	5	50

*Caution is needed with average data when there is a small number of stores for the species

Oysters are another seafood commonly sold in supermarkets with strong sales in some stores. Various types of prawn products (cooked whole and tails) and green meat and cutlets are also among the main types of seafood sold today as they were in 1991 except that today there is a greater range on offer; the importation of the cooked tails on a plastic “ring” is a notable innovation, one that is only seen in supermarkets and not in Melbourne fishmongers.

Melbourne and Sydney’s main seafood sales lists are mostly similar except for octopus and mussels which are still very popular throughout Sydney but absent from the Melbourne supermarket list above. Mussels however figure prominently with the Melbourne fishmongers

4.1.14 Seafood Form Purchased

The main seafood types commonly sold by supermarkets and food stores are predominantly the result of some elementary processing such as peeling (prawns), shucking (scallops and oysters) or manufacture such as the seafood extender which is an elaborately processed fish product. Whole shellfish such as lobster and prawns are less common today (Table 4.1.14). Nevertheless there are strong sales of whole prawns in some stores.

Table 4.1.14 Seafood form purchase volumes

Species	Total volume (Kg)	Live	Whole	Fillet	Cutlet	Headed & gutted	Other
Extender	350	0%	0%	0%	0%	0%	100%
Lobster	10	0%	100%	0%	0%	0%	0%
Marinara	62	0%	0%	0%	0%	0%	100%
Oysters (dozens)	227	0%	29%	0%	0%	0%	71%
Prawn Cooked	74	0%	73%	0%	7%	0%	20%
Prawn Cooked Ring	16	0%	0%	0%	0%	0%	100%
Prawn Cooked Tiger	24	0%	100%	0%	0%	0%	0%
Prawn Green	70	0%	71%	0%	0%	0%	29%
Prawn Meat / Cutlet	45	0%	0%	0%	11%	0%	89%
Scallops	67	0%	0%	0%	0%	0%	100%
Squid	6	0%	50%	0%	0%	0%	50%
Squid Ring Crumbed	5	0%	0%	0%	0%	0%	100%
Squid Rings /Tubes	63	0%	0%	0%	0%	0%	100%

The marinara mix shown in the table above is a mix of cooked and raw mollusc, fish and crustacean flesh designed for cooking by the purchaser.

Also of interest is the predominance of processed squid products such as tubes and rings which are produced after cleaning whole squid.

Live seafood did not make the list as a main type of seafood but live mussels are regularly stocked by several supermarkets even though they were not main sellers for those stores.

The make up of the seafood form sold today is not unlike that reported for Melbourne in 1991 nor Sydney in 1999, except for the higher frequency of whole prawns in Sydney, particularly farmed prawns, versus the more processed forms of prawns.

4.1.15 National Origin of Fish And Seafood

Interviewees were aware of the national origin of most of the main types of fish and seafood with the notable exception of the *smoked salmon*, *whiting*, *crumbed shark* and the *crumbed fish* fillets, and occasional uncertainty about several other species.

According to the information from respondents, approximately two thirds of the total fish volume listed in the table below was of Australian origin, this is because of the dominance of farmed salmon and fish from the South East Trawl fishery (flathead, grenadier, ling and warehou). This contribution from Australian aquaculture and fishing is greater than the approximately equal Australian and overseas origin for Sydney's main fish sales in 1999.

4.1.15a National origin of the main fish and seafood sold

Species	Total Volume Kg	Imported	Australian	Don't Know
Barracouta	5	0%	100%	0%
Basa	227	100%	0%	0%
Cod Smoked	286	94%	3%	2%
Dory	20	50%	50%	0%
Fish Crumbed	167	0%	67%	33%
Flathead	240	0%	100%	0%
Grenadier Blue	432	12%	88%	0%
Hake	10	100%	0%	0%
Ling	128	0%	100%	0%
Mackerel Smoked	1	100%	0%	0%
Perch Nile	198	98%	2%	0%
Roughy Orange	26	0%	100%	0%
Salmon Atlantic	364	2%	98%	0%
Salmon Atl Portn/Stk	333	0%	100%	0%
Salmon Smoked	120	5%	53%	42%
Shark	126	24%	58%	18%
Shark Crumb / Batter	15	67%	0%	33%
Swordfish	38	0%	100%	0%
Trout Smoked	9	29%	71%	0%
Tuna	80	0%	100%	0%
Warehou	89	0%	100%	0%
Whiting	25	60%	0%	40%
Whiting Blue	23	100%	0%	0%

These figures indicate that Australian farmed salmon and trout contribute about a quarter of the total volume turnover of the supermarket sector.

The four major imports for Melbourne were basa, Nile perch, smoked cod (=hake) and hake (Table 4.1.15a), species which are not farmed or landed in Australia; the small volume of Nile perch shown as Australian in the table above was apparently wrongly identified.

The Australian/overseas source of seafood is a reverse of the fish supply situation with almost 60% coming from overseas. Oysters, scallops and lobster are the exceptions with all of the supply reported as Australian. The uncertainty (*don't know*) on key products such as Extender makes a more precise calculation difficult and unreliable. Overall Australian product accounts for about 64% of the total fish and seafood sold by the supermarket sector in Melbourne

The figures in Table 4.1.15b, below, indicate that Australian farmed oysters contribute almost 20% to the supermarkets sector's volume of seafood sold (assuming a dozen (Pacific) oysters weigh 800 grams).

In all Australian aquaculture contributed approximately 25% of the fish and seafood sales of the supermarket sector according to the purchase volume figures. Imported aquaculture contribution is difficult to assess with the information available. Aquaculture's contribution to sales was not assessed in 1991 or 1999.

Table 4.1.15b National origin of seafood sold

Species	Total volume (Kg)	Import	Australia	Don't know
Extender	350	28%	29%	43%
Lobster	10	0%	100%	0%
Marinara	62	84%	16%	0%
Oysters (dozens)	227	0%	100%	0%
Prawn Cooked	74	27%	66%	7%
Prawn Cooked Ring	16	76%	0%	24%
Prawn Cooked Tiger	24	100%	0%	0%
Prawn Green	70	100%	0%	0%
Prawn Meat/Cutlet	45	62%	33%	4%
Scallops	67	0%	100%	0%
Squid	6	100%	0%	0%
Squid Ring Crumbed	5	100%	0%	0%
Squid Rings / Tubes	63	87%	0%	13%

The predominance of Australian product closely parallels the situation for the Sydney supermarket sector sales in 1999 when imports were estimated as 29% of supply.

4.1.16 Sources Of Fish And Seafood Supplies

The vast majority of the fresh supply for the supermarkets, including aquaculture produce, is ordered from a small number of head office approved suppliers who were nominated as *other* although they commonly operate as a fish/seafood processor and/or distributor. Even though many interviewees reported they are free to choose their suppliers, direct buying from fishers or farmers is rare. Almost all of the frozen fish and seafood which is sold chilled or in the frozen form was sourced from the supermarket's cold storage warehouse/distribution centre or from approved suppliers and was also nominated as *other*.

Table 4.1.16a Sources of fish supplies

Species	Total volume (Kg)	F/man farmer	General W/saler	Fish W'saler /Co-op	Fish Mkt	Other
Barracouta	5	0%	0%	0%	0%	100%
Basa	227	0%	0%	0%	0%	100%
Cod Smoked	286	0%	1%	9%	0%	91%
Dory	20	0%	0%	0%	0%	100%
Fish Crumbed	167	0%	0%	0%	0%	100%
Flathead	240	0%	0%	1%	0%	99%
Grenadier Blue	432	0%	0%	3%	0%	97%
Hake	10	0%	0%	100%	0%	0%
Ling	128	0%	0%	0%	0%	100%
Mackerel Smoked	1	0%	100%	0%	0%	0%
Perch Nile	198	0%	0%	0%	0%	100%
Roughy Orange	26	0%	0%	0%	0%	100%
Salmon Atlantic	364	0%	0%	0%	0%	100%
Salmon Atl Portion / Stk	333	0%	0%	0%	0%	100%
Salmon Smoked	120	0%	6%	6%	0%	88%
Shark	126	0%	0%	8%	0%	92%
Shark Crumb / Batter	15	0%	0%	0%	0%	33%
Swordfish	38	0%	0%	0%	0%	100%
Trout Smoked	9	0%	12%	29%	0%	59%
Tuna	80	0%	0%	0%	0%	100%
Warehou	89	0%	0%	6%	0%	94%
Whiting	25	0%	0%	0%	0%	100%
Whiting Blue	23	0%	0%	0%	0%	100%

This head office directed buying and sourcing situation has prevailed in the supermarket sector since the 1991 NSCS although the nominated source does show some variation, for example in Sydney 1999 *fish wholesaler* was more commonly nominated than *other*.

Table 4.1.16b Source of seafood supply

Species	Total volume (Kg)	F/man/ farmer	General W/saler	Fish W'saler /Co-op	Fish Mkt	Other
Extender	350	11%	0%	17%	0%	71%
Lobster	10	0%	0%	0%	0%	100%
Marinara	62	0%	0%	0%	0%	100%
Oysters (dozens)	227	0%	0%	0%	0%	100%
Prawn Cooked	74	0%	0%	0%	0%	100%
Prawn Cooked Ring	16	0%	0%	0%	0%	100%
Prawn Cooked Tiger	24	0%	0%	0%	0%	100%
Prawn Green	70	0%	0%	0%	0%	100%
Prawn Meat / Cutlet	45	0%	0%	0%	0%	100%
Scallops	67	0%	0%	0%	0%	100%
Squid	6	0%	0%	0%	0%	100%
Squid Ring Crumbed	5	100%	0%	0%	0%	0%
Squid Rings / Tubes	63	0%	0%	79%	0%	21%

4.1.17 Retailers' Perception of Customers Expectations Of A Store (Q.11)

Question 11 was designed to identify what retailers thought customers looked for in a store and how important various nominated factors were to customers in choosing a store to buy fish in. The results summarised in the table below indicate that almost all retailers (28 out of 29 respondents) considered a *clean store* with friendly staff as *very important* to prospective customers (very low average numerical value). It also shows a polarisation of opinion on how important it is to *sell fresh* rather than frozen fish and seafood, and with an average opinion value of 4.3 this factor was seen as least important of those nominated.

Table 4.1.17 Retailers perception of customers' expectations of a store
(Number of mentions for each possible action from 29 respondents, and average score for importance)

Factor	1 . Very important	2 . .	3 . .	4 . .	5 . .	6 . .	7 . Not important	8 . Don't know	Average score
1. Clean outlet / store	28	0	0	0	0	0	0	1	1.0
2. Sells fresh fish & seafood (ie. Not frozen)	5	5	5	5	3	0	5	1	4.3
3. Has consistently low prices	17	2	5	3	1	0	0	1	1.9
4. Offers Australian fish and seafood	12	2	2	5	3	3	1	1	3.0
5. Has staff informed about fish and seafood	18	3	2	3	1	0	1	1	2.0
6. Is easily accessible to the customer	18	6	0	2	1	0	1	1	1.9
7. Offers a wide variety of fish and seafood products	16	1	1	6	1	2	1	1	2.6
8. Has friendly staff working here	25	2	1	0	0	0	0	1	1.1
9. The customer can be confident that fish or seafood sold as fresh has not been frozen	24	1	1	0	0	0	1	1	1.4

The statement *offers Australian fish and seafood* also drew a divergence of opinion but with most respondents ranking it as important or very important.

These findings are almost the same as those recorded in 1991 in Melbourne and in Sydney in 1999. So overall it appears that retailers' perception of what their customers look for in choosing a store in which to buy fish has not changed.

4.1.18 Retailers' Solutions For Increasing Sales (Q 13a)

The most common response to the question “what actions need to be taken for your store to sell more fish and seafood” was that sales would increase if more retail space was allocated to the display of fish and seafood. The seven mentions shown in the table below all came from stores currently selling fresh/chilled fish and seafood.

The next most common response *solve the short shelf life* came only from stores that were not selling any fish or seafood. A total of four interviewees proposed that the price of fish fillets to consumers fall below \$10 per kilogram. The table below shows other suggestions for in house implementation

Table 4.1.18. Actions proposed which the store can implement to sell more fish.

Suggested Action by the Store/Manager	Number of mentions
Increase the space allocated to seafood	7
Solve the problem of short shelf life of fresh fish	4
Price of fish fillet to fall below \$10 /kg for consumer	4
Prices competitive with outside competition	3
Policy change by head office to introduce fish (small chain)	2
Upgrade the counter from a “deli” to a “fish” counter	2
Change the look of the seafood case: make it look less like a deli and more like the traditional fish shop	2
Allow individual presentation in each store instead of having to always follow the company way of setting out the window	2
Get rid of the competition	2
More in-store tastings and advertising	2
Employ a dedicated seafood person	1
Less variable prices	1
More staff	1

More space and refrigeration facilities was clearly the most popular suggestion after *nothing* for a store to increase its sales in 1991. Interestingly in 2004 no respondents reported that “nothing” could be done to increase sales of fish and seafood and only one replied with a “don’t know.” The complete absence of “*nothing*” response in 2004 suggests that the interviewees were working hard to increase their fish and seafood sales and were hopeful of further increases.

This contrasts with the Sydney 1999 findings where *nothing* was a common response and *more sales display area* was the most common response then.

4.1.19 Seafood Industry Actions To Increase Sales (Q. 13b & 14)

Retailers clearly felt that the best action the seafood industry could take would be to invest in various promotional activities such as advertising (“not just for canned tuna”), cooking demonstrations and tastings and informational literature as detailed in the table below.

Table 4.1.19a Action by the seafood industry to assist stores sell more fish and seafood.

Suggested Action for the Industry	Number of comments
More advertising & promotion	9
Cooking demonstrations and information cards	5
None	8
Increase the variety: customers get bored with the same old fish species	4
Reduce the price	3
More options on the minimum weight bought per store/provide sample lots	3
Improve the shelf life of fresh fish sold	3
Provide training for deli managers and staff	2
Provide a more regular supply of fish	1
Supply portion cut fillets	1
Reduce the delivery time between ordering and delivery	1
Small “sample-sized” deliveries of new species to see if they will sell	1
Come up with different display equipment and ideas to make the counter look attractive	1
Educate consumers that seafood “highlighter” is actually healthy food made from fish and is not junk food”	1

These findings are almost identical to those of 1991 when more promotional activities and *none* were the two outstanding types of comment and price was one of the secondary suggestions. In Sydney 1999 *none* was the outstanding common comment and promotional activities and price were secondary suggestions.

So retailers still see trade support --- promotion and trade and consumer education---as the biggest issue to be addressed by the seafood industry if it wishes to boost sales through their stores.

In addition to seeking the retailer's suggestions on initiatives that the seafood industry may undertake the interviewees were also asked to comment on the likely impact of four possible actions.

*Table 4.1.19b Likely impact of seafood industry action.
(Number of mentions)*

Potential action to increase fish & seafood sales		1 . Great impact	2 . Some impact	3 . A little impact	4 . No impact	5 . Don't know
1.	A more consistent supply of fish	8	10	2	4	9
2	Availability of information on cooking and preparation	14	5	4	2	8
3	More advertising support for fish & seafood	21	4	1	0	7
4	Greater encouragement of aquaculture industry	12	6	6	1	8

The results tabled above indicating that the majority of respondents saw *more advertising support* and “*availability of information on cooking and preparation*” as the initiatives likely to have great impact on fish and seafood sales are consistent with the suggestions put forward earlier (previous page) by individual retailers.

Almost identical findings were recorded in Melbourne in 1991. In Sydney in 1999 *more advertising support* was also seen as having great impact by the largest number of retailer while a more consistent supply of fish seemed to have ambivalent support much the same as that recorded for Melbourne.

4.1.20 Potential Sales of Underutilised & Aquaculture Species

Most interviewees were not optimistic about increasing sales of the under-utilised wild fish (pilchards and albacore) or any of the nominated aquaculture species; respondents were typically far less positive than in 1991 and the percentage of respondents suggesting *none* had potential for increased sales increased from 35% to 48% since 1991 (Table 4.1.20 below). Not one respondent had a positive outlook on albacore tuna, a species not examined in 1991.

The outlook for aquaculture products in Sydney and Melbourne in 1991 was essentially similar but it had become far more optimistic in Sydney by 1999 when a positive outlook, of at least 55%, was reported for all of the species listed below.

Table 4.1.20 Potential for sales growth of under-utilised and aquaculture species

Species	No.	% of respondents optimistic (2004)	% of optimistic (1991)
1. Pilchards	4	10	12
2. Albacore	0	0	NA
3. Farm prawns	3	8	27
4. Rainbow trout	3	8	33
5. Mussels Australian	4	10	13
6. Farm barramundi	6	15	17
7. None	19	48	35
8. Don't know	3	8	10

The general sentiment underlying the weak outlook was that high prices and short shelf life made it difficult to boost sales. A few specific comments from interviewees follow.

Farmed prawns: These were reported as selling reasonably well, especially when on special, but sales development had been marred by publicity about the safety of imported farmed prawns.

Rainbow trout: Comment was that this fish sells well at times only and that sales were limited by the move away from fish to fillets.

Barramundi: The grey colour and large size of fillets were nominated as factors constraining sales of this product.

Mussels : Only sell these occasionally; Xmas item only.

4.1.21 Outlook For Next Five Years (Q 15)

The retailers who were selling fish and seafood were asked to consider whether sales would increase, decrease or stay the same and why.

The table below shows that optimists and pessimists were about equal in number with only 3% giving a “don’t know” response.

Table 4.1.21 Sales Forecasts for the Next Five Years (% of respondents)

Sales Forecast	Percentage of Respondents			
	Increase	Decrease	Stay the same	Don't Know
Response 2004 Melbourne	54	0	45	3
Response 1999 Sydney	65	19	15	0
Response 1991 Melbourne	52	2	42	4

The percentage of Melbourne respondents optimistic/pessimistic about sales for the next five years were almost the same in 2004 and 1991, but Sydney retailers in 1999 were the most optimistic of all.

The outstanding reason for optimism on future fish sales was the retailers’ own improvements in display area, management and staff knowledge in recent years. Other factors identified as important were the rising price of meat.

By contrast in 1991 the main reason for optimism was that people were becoming more health conscious and fish was seen as a healthy food. The health benefits of fish were not reported as important in Melbourne in this study.

In Sydney in 1999 the outstanding reason for optimism was the expectation of increasing population leading to increased demand; the next most common reason was because of the move from predominantly chilled to more fresh product.

The most common reasons for expecting sales to remain the same were that the store had done its best to build sales and had no further room to allocate to fish sales and that the competition for sales will not decrease. Other reasons forwarded were that the store was not particularly interested in fish; fish was too dear; customers do not come to supermarkets for fresh fish and that fish sales are “killed” by bad news/publicity on fish such as mercury stories.

The main reasons for pessimism in 1991 were not unlike those of 2004: that competition from fishmongers would remain strong, consumer concerns about environmental contamination of fish and the difficulties in attracting and keeping staff.

4.2 Findings From The Fishmongers Survey

This section has the detailed findings from the interviews with 40 operators of retail outlets with fresh fish and seafood sales constituting the major part of the business. These included outlets inside shopping centres, on the high street and in the markets in the city and suburbs.

These outlets ranged from the modern bright store in new shopping centres, to older stores in centres or on the street front to some stores that were sorely in need of renovation. The settings varied from the ultra modern to the charming *olde worlde* Victoria market that attracted tourists while several other market outlets had a smell and appearance that was uninviting or even off-putting for some passer bys.

4.2.1 Respondent's Position in the Business

More than 80% of the respondents were owner or partners in the business while the remaining seven interviewees were employees working as managers for three different owners.

Six of these seven employees belonged to one of two companies each owning multiple stores.

This is almost identical to the situation in 1991 when 80% of interviewees were owner or operators of single outlets.

4.2.2 Main Problems In Selling Fish And Seafood

Fifteen percent of interviewees replied that they had no main problems when asked for “the main problems” they saw in supplying and selling fresh and frozen fish and seafood; this compares to 12% in 1991 and 37.5% in Sydney in 1999. Most of the Melbourne interviewees however nominated several problems in their business; these problems and the number of citations (in parentheses) were :

- Supply problems, inconsistent supply due to weather or seasonal factors (10)
- High prices of good quality fish and seafood (10)
- Getting and holding good staff, with product knowledge and knife skills (5)
- Lack of consumer confidence due to publicity on mercury, fish names (4)
- Prime Safe’s prohibition on customer’s access to fish and their unpleasant/unhelpful approach to the retailer (4)
- Variability of prices and its negative influence on customers (3)
- Insufficient promotional support for fish vis a vis meat etc (3)
- Long hours of hard work and related difficulty in recruiting staff (3)
- Consumers poorly informed about fish (2)
- Short shelf life of fish; Australian consumers buy only small quantities; Consumers only want to buy fresh not frozen fish (1)

The two outstanding problems were continuity of supply and the high cost of product; exactly the same ranking of problems as in 1991. These two problems are related but are particular acute in Melbourne because of the relatively small range of popular varieties of fish and seafood (Section 5.6) in this city. The significance of some of these problems are discussed in the following section.

The food safety authority Prime Safe Victoria came in for strong criticism over its sudden, “heavy handed” and “intimidating” prohibition on customers handling fish in store as part of its new legislation. Prime Safe’s concern that the handling of raw fish represents a public health hazard is not shared any other Australian agency, nor supported by its singular application to fish but not fruit etc which are also handled and smelled in stores by consumers but then often eaten without washing/cooking.

Prime Safe’s prohibition goes against the wishes of Melbourne consumers who like to go to markets where they can touch and smell whole fish before they buy (focus groups research Volume two).

In Sydney in 1999 *high prices* and *poorly informed consumers* were the two most common main problems followed by supply and staffing difficulties. So the fishmongers main problems seem to have changed very little in Melbourne and Sydney since 1991.

The significance of selected possible problems to fishmongers are summarised in the following table; these findings are consistent with the main problems identified unprompted by fishmongers.

4.2.3 Significance of Possible Problems

The high *price of fish and seafood* and *low margins* are the most significant problems faced by fishmongers, as they were in 1991. Other problems like *Unavailability of staff with experience* and *Difficulty of selling fish and seafood if it is labelled frozen* divided opinion while *Lack of knowledge of customers* was judged a significant problem by about half.

Table 4.2.3 Fishmongers assessment of the significance of possible problems.
(Number of mentions)

Possible problem	1. Very signif. Problem	2. Quite signif	3. Not very significant	4. Not a problem	5. Don't Know
1. The variable quality of fish and seafood available	3	9	14	9	5
2. Cost of disposing of waste products	2	3	7	25	3
3. Unavailability of staff with experience in handling and selling fish and seafood	9	9	7	9	6
4. Lack of knowledge of customers in preparing and cooking fish and seafood	10	7	14	5	4
5. Uncertainty about whether fish bought are correctly named	2	5	7	19	7
6. The difficulty of selling fish and seafood if it is labelled frozen	9	5	7	6	13
7. Unfavourable publicity about fish and seafood	9	10	10	6	5
8. Customers dislike fish because of the bones	9	9	10	5	7
9. Fish is too expensive to buy	15	10	8	4	3
10. Seafood is too expensive to buy	15	9	8	4	4
11. The low margins necessary to remain competitive	9	17	7	5	2
12. Difficulty getting continuous supply at steady prices	7	7	11	10	5
13. Lack of training in fish handling and hygiene	3	7	8	15	7
14. Difficulty getting continuous supply of a good range of fish	5	4	14	13	4

The difficulty of selling fish and seafood if it is labelled frozen was the most problematic issue judging by the strong *Don't know* response. This uncertainty and the even spread of other responses probably reflect the difficulty most retailers face when they label thawed out frozen product as such knowing that frozen fish is not well regarded by consumers. The large number of *don't know* is also partly a reflection of language difficulties faced by some in discussing a complex issue like this one. This finding is in great contrast to 1991 when this issue was widely seen as a significant problem and very few were uncertain on this subject.

The majority of fishmongers are confident about the identify of the fish they buy but about one in five acknowledge that *Uncertainty about whether the fish bought are correctly named* is a significant problem. In 1991 far more fishmongers were confident about having the correct name when they bought fish; this change in significance of the problem in getting the correct name is a reflection of the influx of relative newcomers to the Melbourne trade in recent years.

The other issue of current interest is the impact of *Unfavourable publicity about fish and seafood*. The majority of respondents saw this as a significant problem not unlike the situation reported in 1991. This observation has been supported by consumer comment that their purchase has been reduced as a result about unfavourable publicity about pollutants in seafood.

In Sydney in 1999 *unfavourable publicity* and the *price of seafood* were considered a very significant problem while *low margins* was rated mostly as quite significant. So it is clear that episodes of unfavourable publicity such as the Wallis Lake oyster incident in NSW in the late 1990s and the publicity about mercury in fish in the early 2000s can have a strong impact on sales; according to fishmongers the mercury publicity dented sales for about a month or so after media comment.

4.2.4 Main Fish And Seafood Buy/Sell Statistics

The ten main species (six fish and four seafood) accounted for 25% to 95% of the total sales with an average contribution of 55% of the sales volume. In 1991 the average was 70% and range was 20 to 90%.

The average weekly sales turnover of fishmongers was \$19857 with the takings ranging from \$6000 to \$100,000 per week. This average has more than doubled (123%) since 1991 (\$8896). Much of this increase since 1991 however is the result of increasing fish prices and not just increases in sales volumes. Flathead for example has more than doubled in cost price since 1991 (Appendix 3) but its sale price has increased almost fourfold because of the far greater waste in producing skinless boneless fillet than the old style with skin and bones.

The weekly sales figures were typically highest for market outlets and fish shops inside larger modern shopping centres with shops in the street front and in older or smaller centres recording the lowest sales figures.

The weekly purchase volume of the main species sold ranged from 37 to 2600 kg for fish species and 10 to 1900 kg for seafood with an average volume of 779 kg fish plus 324 kg seafood per week. These figures are the volumes bought rather than sold because many species are sold as fillets after filleting in house and the disposal of considerable volumes of waste (more than half of the fish volume bought in some cases); there is also “shrinkage” when unsold fish is thrown out.

Table 4.2.4 Turnover volumes of the main six fish and main four seafood species.

	Average	High	Low	No. of respondents
Total weekly volume of main 6 fish (Kg)	779	2600	37	35
Total weekly volume of main 4 seafood (Kg)	324	1900	10	34

The Melbourne fishmonger sector’s aggregate sales value, based on an estimated 120 fishmongers in Melbourne’s (our estimate from yellow pages listings and field observations) and the average figure of \$19857 per week is \$2.38 million per week or \$124 million per annum. This is similar to the \$138 million estimate derived from the consumer survey data (Volume II).

4.2.5 Incidence Of Customers Seeking Assistance

The proportion of customers seeking advice ranged from zero to 100% with an average of four out of ten doing so according to 39 respondents. In 1991 the corresponding data were zero to 100% with an average of five out of ten.

So, at least four out of ten consumers still seek advice from their fishmonger on what to buy, the same result as found in Sydney in 1999.

4.2.6 Main Fish Species Purchase Statistics

Table 4.2.6 Main fish species weekly purchase statistics

Species	*Number of shops	Total volume # (Kg)	*Average volume/shop (Kg)	Lowest volume (Kg)	Highest volume (Kg)
Barracouta	1	30	30	30	30
Barramundi	1	40	40	40	40
Barramundi Farm	5	945	236	5	800
Barramundi Wild	2	237	119	12	225
Blue Eye	8	387	65	5	120
Bream	1	100	100	100	100
Bream, Threadfin	1	30	30	30	30
Carp	1	320	320	320	320
Dory	5	190	63	20	100
Dory John	5	165	41	10	100
Emperor Red	1	16	16	16	16
Escolar	1	12	12	12	12
Flathead	28	6,777	271	5	1,280
Flounder	2	330	165	30	300
Garfish	1	30	30	30	30
Grenadier Blue	19	2,047	120	5	380
Hapuka	2	67	34	7	60
Kingfish farm	1	20	20	20	20
Ling	24	1,929	96	5	320
Mackerel Spanish	3	530	265	30	500
Marlin	1	60	60	60	60
Morwong	1	2	2	2	2
Perch Golden	3	400	200	100	300
Roughy Orange	7	955	136	20	320
Salmon Atlantic	22	3,205	153	10	480
Sardines	1	20	20	20	20
Shark	21	2,899	145	20	384
Snapper	12	1,105	92	10	200
Snapper Queen	1	320	320	320	320
Swordfish	3	100	33	15	55
Threadfin	3	580	290	80	500
Trout Ocean	2	45	23	5	40
Trout Rainbow	4	530	133	40	240
Tuna	3	390	195	150	240
Warehou	15	1830	131	10	300
Whitebait	1	150	150	150	150
Whiting	3	300	120	120	120
Whiting King George	2	40	20	10	30

* Some averages are based on small numbers of stores and so need to be used with caution #

The total weekly sales of the 40 stores would be higher than the figure listed here because the species may be sold regularly but not be one of the six main sellers for the store and so not accounted for.

The top six main selling fish were Flathead, salmon, shark, grenadier, ling and warehou in order of aggregate sales and except for warehou, in that order too for average weekly sales per outlet. Flathead clearly stands out from the other fish because of its frequency as a main seller as well as aggregate volume sold.

All of the top six main selling species are mostly sold as fillets with very little used in the cutlet or whole form.

Other noteworthy species are snapper because it is commonly sold as a whole fish as well as fillet and blue eye which are typically sold as cutlet and fillet. Escolar is of interest too because it is a fish with purgative properties for some consumers, which is commonly sold under other names such as Butterfish.

Flathead's rise to prominence is widely seen as a result of increasing sales as skinless boneless fillets over the past decade because in 1991 it was mostly sold in the "wing-on" fillet form complete with skin and bones and only ranked number three in store numbers and recorded lower sales volumes.

Atlantic Salmon has gone from zero to hero status since 1991 when it was cited as a main seller by a total of only eight stores across all the Australian capital cities. Farmed barramundi too has made a noteworthy entry to the main sellers list surpassing the Victorian grown Rainbow trout (Table 5.6). Salmon and barramundi have evidently benefited from the marketing efforts of individual companies as well as generic industry promotion over the past decade.

Orange roughy was the star of 1991, as shown below but has since declined enormously in popularity and average volumes per store apparently as a result of severely decreased supply and associated steep price rises.

Warehou too has declined markedly in terms of store popularity and average sales volumes for no apparent reason while the market position of grenadier, shark and ling have not changed much since 1991.

Best sellers and the number of outlets nominating it as a best sellers

2004 (39 respondents)	1991 (51 respondents)
Flathead 28	Orange Roughy 47
Salmon 22	Warehou/trevally* 44
Shark 21	Grenadier 31
Grenadier 19	Flathead 29
Ling 24	Shark 24
Warehou 15	Ling/Kingclip 24
Total of the six average sales volumes=916 kg/week	Total of the six average sales volumes approximately 900 kg/week

*Trevally and Kingclip were names used in the 1991 study for warehou and ling respectively..

Sydney had recorded similar changes since 1991, with flathead and Atlantic salmon increasing market penetration and average sales per store but orange roughy was still an important part of the fish mongers sales in 1999. The Sydney's main sellers list was topped by fish which were sold predominantly as fillet and flathead's rising sales were attributed to a shift to boneless, skinless fillets too.

Tuna and swordfish have experienced markedly different market success with Sydney and Melbourne fishmongers. Swordfish in particular had made the top quarter of the main sellers list in terms of store numbers and volumes sold while tuna had also made considerable gains in Sydney by 1991 but both these species have enjoyed far less success in Melbourne's fishmongers outlets where they lie in the lower ranks of main sellers and yet seem to perform well with some Melbourne supermarkets.

Innovation has been strongest in outlets with a substantial Asian clientele where imported species such as tilapia, milk fish, snake head and pomfret are popular but not yet reaching main seller status. Live fish have also been an innovation in stores and markets selling mainly to Asian consumers, they typically carry several species of marine and freshwater fish and marine molluscs alive.

4.2.7 Fish Forms Bought (Q. 5)

Most fish were bought in the whole form while several of the large fish species such as tuna, wild barramundi and farmed trout and salmon arrived in Melbourne in the gilled and gutted (“*other*”) form while shark and the billfishes such as swordfish and marlin were bought in the headed and gutted form. The *other* category in Table 4.2.7 on the following page invariably refers to gilled and gutted fish. The table below also indicates the presence of live barramundi as a part of the main sales of some outlets.

Although fillets were the predominant product sold to consumers most fishmongers prefer to fillet and cutlet fish in house and hence purchase of fish in the fillet form were reported as negligible. Spanish mackerel and Ling are unusual because the former is bought as headed and gutted or gilled and gutted fish equally, while ling is bought in all forms except cutlets.

Atlantic salmon is the only fish readily offered to fishmongers in the cutlet form by suppliers but this product form has not yet made the main sellers list in Melbourne.

These buying, in-house processing and selling practices are similar to those in Melbourne in 1991 and Sydney 1999 but there are signs of increasing proportions of fillet purchases in Melbourne and Sydney since 1991 in this sales data as well as the quantitative findings from the consumer surveys.

A change not evident in the tables is the shift from fresh shark fillet to an increasing use of frozen shark from southern as well as northern waters of Australia, and overseas.

Table 4.2.7 Fish form bought

Species	Total volume (Kg)	Live	Whole	Fillet	Cutlet	Headed & gutted	Other
Barracouta	30	0%	100%	0%	0%	0%	0%
Barramundi	40	0%	50%	0%	0%	0%	50%
Barramundi Farm	945	1%	98%	1%	0%	0%	0%
Barramundi Wild	237	0%	0%	0%	0%	0%	100%
Blue Eye	387	0%	0%	1%	0%	68%	31%
Bream	100	0%	100%	0%	0%	0%	0%
Bream, Threadfin	30	0%	100%	0%	0%	0%	0%
Carp	320	0%	0%	100%	0%	0%	0%
Dory	190	0%	100%	0%	0%	0%	0%
Dory John	165	0%	76%	6%	0%	18%	0%
Emperor Red	16	0%	100%	0%	0%	0%	0%
Escolar	12	0%	0%	100%	0%	0%	0%
Flathead	6,777	0%	96%	2%	2%	0%	0%
Flounder	330	0%	9%	0%	0%	0%	91%
Garfish	30	0%	100%	0%	0%	0%	0%
Grenadier Blue	2,047	0%	0%	3%	0%	97%	0%
Hapuka	67	0%	0%	0%	0%	0%	100%
Kingfish farm	20	0%	100%	0%	0%	0%	0%
Ling	1,929	0%	12%	7%	0%	47%	34%
Mackerel Spanish	530	0%	0%	0%	0%	53%	47%
Marlin	60	0%	0%	0%	0%	100%	0%
Morwong	2	0%	0%	100%	0%	0%	0%
Perch Golden	400	0%	25%	0%	0%	0%	75%
Roughy Orange	955	0%	100%	0%	0%	0%	0%
Salmon Atlantic	3,205	0%	3%	0%	0%	9%	87%
Sardines	20	0%	100%	0%	0%	0%	0%
Shark	2,899	0%	0%	9%	0%	91%	0%
Snapper	1,105	0%	100%	0%	0%	0%	0%
Snapper Queen	320	0%	100%	0%	0%	0%	0%
Swordfish	100	0%	0%	0%	0%	100%	0%
Threadfin	580	0%	14%	0%	0%	0%	86%
Trout Ocean	45	0%	0%	0%	0%	0%	100%
Trout Rainbow	530	0%	0%	0%	0%	0%	100%
Tuna	390	0%	0%	0%	0%	0%	100%
Warehou	1,830	0%	97%	1%	0%	0%	3%
Whitebait	150	0%	100%	0%	0%	0%	0%
Whiting	300	0%	100%	0%	0%	0%	0%
Whiting King G	40	0%	100%	0%	0%	0%	0%

4.2.8 Reasons For Buying/Selling Main Fish Species (Q.8b)

The reasons offered by fishmongers on why nominated main selling species were bought/sell well are detailed in the table on the following pages, but the common ones are:

- well known and regarded eg flake
- cheap eg blue grenadier and warehou
- popular treat especially for festive or other occasion eg prawns
- attractive colour eg orange roughy's white flesh and the pink in Atlantic salmon
- available/offered boneless eg flathead, which jumped to the top of the list after offered boneless.

Table 4.2.8 Reasons for buying/selling main sellers

Fish	Reasons
Barramundi farmed	The attractive appearance and good taste of this fish was identified as the reason behind its success; its popularity with Asian consumers as steamed fish was also mentioned
Blue eye	The large thick flesh, light attractive flavour and few bones were identified as the features behind this species' success.
Dory	The well regarded name dory and the medium attractive taste of these species were cited as the main features driving sales of the dories
Flathead	Flathead received the most comments and almost all fishmongers commented on its sales boom since offered as skinless boneless fillet or tail more than a decade ago
Grenadier, Blue	The boneless fillet and cheap price were the two common comments on this fish; also noted were the attractiveness of a thick portion
Ling	The boneless nature of this fillet was the dominant observation; the taste and versatility were each noted by several respondents.
Mackerel Spanish	Easy to cook and versatile fish; sought out for fish balls and casseroles by several ethnic groups.
Roughy, orange	The attractive white colour, good taste and light flavour were identified as the key features behind its continued demand; the high price was noted as the cause of decreased popularity of this today
Salmon Atlantic	The universal prestige image and rapid gain in popularity was the most common reason cited; the advertising and promotional support for this fish was also commonly noted; the versatility with cooking and sashimi and sushi use were noted by several respondents as was the steady price on this farmed fish.
Shark /flake	Long standing popularity/favourite status and boneless fillets were the outstanding factors cited; fine taste was commonly cited; the profitable use as a cutlet in store was noted by one respondent
Snapper	The long standing popularity/favourite status of the fish was most commonly cited; other factors noted were its good looks and versatility in cooking
Swordfish	Well regarded because of a unique taste; holds together well as a boneless piece of fish; popular for barbeques
Trout rainbow	Described as a consistently affordable whole fish from nearby farms
Tuna	Highly regarded for raw consumption as sashimi and sushi
Warehou	The cheap price of this fish was the outstanding feature; secondary was its use as a skinless boneless fillet; several commented on its good taste with strong sauces and flavours or with curries.

4.2.9 Main Seafoods Purchase Volumes (Q. 6a)

Whole prawns (cooked and green) topped the nominations as main sellers followed by oysters, a situation remarkable similar to that recorded in 1991; comparable sales volume data are unavailable for 1991 but the information available suggests that average sales volume of cooked prawns have increased by more than a third since 1991.

The volumes shown in the table below probably represent the buy *and* sell statistic because there is little processing of seafood in house, other than marinara.

The large number of nominations of green prawns as a main seller is testimony to the sales growth of this product line in Melbourne since 1991 when they were not sufficiently important to get explicit mention.

Table 4.2.9 Main seafoods weekly purchase volumes

Species	*Number of shops	Total volume (Kg)	*Average volume/shop (Kg)	Lowest volume (Kg)	Highest volume (Kg)
Crab Blue Swimmer	4	120	40	10	60
Crab Mud	2	600	300	100	500
Lobster	3	55	28	5	50
Marinara	6	795	133	20	300
Mussel meat	1	2	2	2	2
Mussels	17	815	54	10	200
Octopus	3	60	30	10	50
Oysters	5	300	100	40	200
Oysters Pacific	18	3235	180	10	500
Pipis	3	1025	342	5	1000
Prawn Cooked	17	692	46	7	120
Prawn Cutlet	3	67	22	2	60
Prawn Green	16	2237	149	7	1000
Prawn Meat	8	70	10	2	20
Scallop Meat	15	407	29	2	100
Seafood sticks	1	10	10	10	10
Squid	6	290	58	5	200
Squid Tube	5	225	45	5	100

* Some averages are based on small numbers of stores and so need to be used with caution

The product diversity of main seafood items is restricted to just seven animal groups.

Oysters have maintained a strong position in fishmongers sales since 1991; marinara mix seems to have maintained its moderate popularity and strong sales in some stores while squid has fallen in terms of store nominations. Mussel meat, seafood extender and seafood sticks were moderately popular in 1991 but enjoy little demand in Melbourne fishmongers today.

2004 (39 store respondents)	1991 (51 store respondents)
Prawns (cooked & green) 35 stores	Prawns 44 stores
Oysters 23	Oysters 28
Mussels 17	Squid/calamari 17
Scallop 15	Scallops 17

Mussels (whole) have moved into the ranks of best sellers with wide market penetration matched by strong average sales volumes. Much of this market expansion was attributed to the active marketing efforts of Tasmanian companies competing with the output of the Victorian counterparts.

Melbourne fish mongers sales of seafood today are different to those noted in Sydney in 1999. Prawns were the outstanding seafood category in Sydney with strong sales of farmed, green and cooked wild prawns while oysters, octopus and blue swimmer crabs all enjoyed a moderate level of popularity.

Farmed prawns, predominantly cooked black tiger prawns, had made considerable inroad into the Sydney fishmongers trade in 1999 and continue to record strong sales but have not yet made the main seller list of any Melbourne fishmonger.

This marked lack of market penetration is a result of a paucity of market promotion in Melbourne and the perception of many fishmongers that the farmed prawns have a poorer eating quality than the Melbourne benchmark of wild South Australian prawns. This lack of market promotion and weak image extend to other aquaculture species and probably accounts for the lack of new aquaculture seafood in Melbourne versus relative success of farmed finfish.

4.2.10 Seafood Forms Purchased (Q. 5)

Almost all of the seafood species and products are bought and sold in the whole form — live or chilled — with the notable exception of processed products such as prawn meat and cutlets and *others* oyster in the half shell.

The notable species in the live category is the mud crab, sourced from Queensland or the Northern Territory, and sold live in market outlets with a sizeable Asian clientele.

Table 4.2.10 Seafood forms bought.

Species	Total volume (Kg)	Live	Whole	Fillet	Cutlet	Headed & gutted	Other
Crab Blue Swimmer	120	0%	100%	0%	0%	0%	0%
Crab Mud	600	100%	0%	0%	0%	0%	0%
Lobster	55	0%	100%	0%	0%	0%	0%
Marinara	795	0%	0%	0%	0%	0%	100%
Mussel meat	2	0%	0%	0%	0%	0%	100%
Mussels	815	98%	2%	0%	0%	0%	0%
Octopus	60	0%	100%	0%	0%	0%	0%
Oysters	300	20%	0%	0%	0%	0%	80%
Oysters Pacific	3,235	30%	22%	0%	0%	6%	41%
Pipis	1,025	100%	0%	0%	0%	0%	0%
Prawn Cooked	692	0%	100%	0%	0%	0%	0%
Prawn Cutlet	67	0%	0%	0%	100%	0%	0%
Prawn Green	2,237	0%	100%	0%	0%	0%	0%
Prawn Meat	70	0%	0%	0%	0%	0%	100%
Scallop Meat	407	0%	0%	0%	0%	0%	100%
Seafood sticks	10	0%	0%	0%	0%	0%	100%
Squid	290	0%	100%	0%	0%	0%	0%
Squid Tube	225	0%	0%	0%	0%	0%	100%

The *other* category seafood stick, a product manufactured from fish flesh and marinara a mixture of fish, mollusc and prawn flesh typically prepared in-house. Many of the seafood forms shown in table 5.10 are ready-to-eat as is, raw or cooked; *other* oysters are raw in the half shell while seafood sticks and cooked prawns have been cooked by the producer and are served at room temperature or straight from the refrigerator.

The range and proportion of seafood forms bought are similar to those reported in Melbourne in 1991 and Sydney 1999 because there has been little product or packaging innovation since 1991 that has yet found its way into the fishmongers main list. One development of note is the increase in sales volumes of marinara reported by some fishmongers as a result of preparing it in house each day, with some fresh ingredients, compared to early 1990s when it was just a frozen imported mix. Another change, not evident in the table, is the introduction of imported vannamei farmed prawns from Asia which were bought as whole prawns as well as the meat.

4.2.11 Reasons for Buying/Selling Main Seafoods (Q.8b)

The taste, popularity and market image were nominated as the key success factors for a number of seafood species/product but the group as a whole was widely regarded as a treat especially sought out during a festive season such as Christmas, Easter or other special occasion.

Seafood	Reasons
Marinara	The pre-eminent comment about marinara was that it had become a best seller because the retailer was producing it in house daily from mostly fresh ingredients.
Mussels	Mussels were described as being a cheap shellfish, having a unique taste, a traditional Melbourne seafood, more popular in summer or having had a sales fillip since the release of a promotional leaflet.
Oysters	The comments about oysters related to their being a delicacy, raw or cooked, particularly a summer one and that sales are strong because the oysters are opened fresh in house and/or to order
Prawns cooked	The ready to eat, convenience of these attractive crustaceans was highlighted as was their image of a treat or something to spoil yourself with occasionally, especially summer
Prawns uncooked	The outstanding observation was that <i>Asian eat them</i> . Other comments were that they are versatile or popular for a barbeque, especially Christmas time
Scallops	Comments were that scallops were a traditional favourite for Melbourne and that they were a particularly tasty seafood
Squid/calamari	Their popularity is ascribed to <i>oldies love them</i> and <i>ethnics like them</i> . Also noted was that they lack bones or shell, <i>delicious fried rings</i> and are so versatile.

The success of marinara since the change to fresh ingredients with their greater visual and taste appeal than the imported frozen mix has been recognised as a critical success factor.

4.2.12 National Origin Of Fish And Seafood

Of the 27 tonnes total of fish listed in the following table 96% was reported as being Australian. Almost all species were exclusively of Australian origin as they were in 1991.

Table 4.2.12a National origin of fish and seafood sold

Species	Total volume (Kg)	Import	Australian	Don't know
Barracouta	30	0%	100%	0%
Barramundi	40	0%	100%	0%
Barramundi Farm	945	0%	100%	0%
Barramundi Wild	237	0%	100%	0%
Blue Eye	387	8%	92%	0%
Bream	100	0%	100%	0%
Bream, Threadfin	30	0%	100%	0%
Carp	320	0%	100%	0%
Dory	190	0%	100%	0%
Dory John	165	30%	70%	0%
Emperor Red	16	0%	100%	0%
Escolar	12	0%	100%	0%
Flathead	6,777	0%	100%	0%
Flounder	330	91%	9%	0%
Garfish	30	0%	100%	0%
Grenadier Blue	2,047	1%	99%	0%
Hapuka	67	0%	100%	0%
Kingfish farmed	20	0%	100%	0%
Ling	1,929	7%	93%	0%
Mackerel Spanish	530	0%	100%	0%
Marlin	60	0%	100%	0%
Morwong	2	100%	0%	0%
Perch Golden	400	0%	100%	0%
Roughy Orange	955	0%	100%	0%
Salmon Atlantic	3,205	0%	100%	0%
Sardines	20	0%	100%	0%
Shark	2,899	7%	93%	0%
Snapper	1,105	50%	50%	0%
Snapper Queen	320	0%	100%	0%
Swordfish	100	0%	100%	0%
Threadfin	580	0%	100%	0%
Trout Ocean	45	0%	100%	0%
Trout Rainbow	530	0%	100%	0%
Tuna	390	0%	100%	0%
Warehou	1,830	0%	100%	0%
Whitebait	150	0%	100%	0%
Whiting	300	0%	100%	0%
Whiting King G.	40	0%	100%	0%

The high percentage of Australian product is due to the predominance of fish from the South East Trawl species much of which are taken in the waters around Victoria. Much of the imported fish was reported as being of New Zealand origin especially the blue eye, flounder, shark and snapper.

Australian aquaculture provided about 35% of the seafood volumes and 17% of fish volumes with an overall contribution of 21% of total fish and seafood.

Of the 10 + tonnes total of seafood listed in the table below approximately 92% was reported as being Australian, so Australian product made up 95% of total fish and seafood. Oysters were mainly sourced from Tasmania or South Australia and Sydney rock oysters were reported as secondary or no importance.

Almost all seafood items were predominantly Australian. Several items were reported as being exclusively imports but the volumes involved were all less than 100kg. Prawn products such as cooked or raw meat remain the most voluminous import for Victoria a state that has little in the way of prawn resources. As noted earlier vannamei prawns have entered trade in Melbourne but as yet in a small way.

In 1991 imports made up more of the Melbourne fishmongers seafood supply because of the larger contribution of overseas seafood sticks and squid products to trade. Scallops are of interest because traditionally supply had come mainly from Victoria or Tasmania but in the past decade there has been increasing reliance on imports. Figures on the origin of the scallops sold in Melbourne in 1991 are not available but the national figures on scallops sales from the NSCS show 30% of the volume were imports.

Table 4.2.12b National origin of seafood

Species	Total volume (Kg)	Imports	Australian	Don't know
Crab Blue Swimmer	120	0%	100%	0%
Crab Mud	600	0%	100%	0%
Lobster	55	0%	100%	0%
Marinara	795	1%	99%	0%
Mussel meat	2	100%	0%	0%
Mussels	815	2%	98%	0%
Octopus	60	17%	83%	0%
Oysters	300	0%	100%	0%
Oysters Pacific dozen	3,235	0%	100%	0%
Pipis	1,025	0%	100%	0%
Prawn Cooked	692	0%	100%	0%
Prawn Cutlet	67	100%	0%	0%
Prawn Green	2,237	28%	72%	0%
Prawn Meat	70	69%	31%	0%
Scallop Meat	407	27%	73%	0%
Seafood sticks	10	100%	0%	0%
Squid	290	0%	100%	0%
Squid Tube	225	7%	93%	0%

4.2.13 Source of Main Species

The table below summarises the findings on the source of the main fish species. This clearly shows the importance of the fish wholesaler and the MWFM; fishermen's cooperatives were not identified as a direct source of supply by any respondent.

Table 4.2.13a *Source of main fish species*

Species	Total volume (Kg)	F/man / farmer	General W/saler	Fish W'saler /Co-op	Fish Mkt	Other
Barracouta	30	0%	0%	100%	0%	0%
Barramundi	40	0%	0%	100%	0%	0%
Barramundi Farm	945	1%	0%	99%	0%	0%
Barramundi Wild	237	0%	0%	5%	95%	0%
Blue Eye	387	0%	0%	17%	83%	0%
Bream	100	0%	0%	0%	100%	0%
Bream, Threadfin	30	0%	0%	100%	0%	0%
Carp	320	0%	0%	0%	100%	0%
Dory	190	0%	0%	11%	89%	0%
Dory John	165	0%	0%	30%	70%	0%
Emperor Red	16	0%	0%	100%	0%	0%
Escolar	12	0%	0%	100%	0%	0%
Flathead	6,777	0%	1%	11%	89%	0%
Flounder	330	0%	0%	100%	0%	0%
Garfish	30	0%	0%	0%	100%	0%
Grenadier Blue	2,047	0%	0%	29%	71%	0%
Hapuka	67	0%	0%	10%	90%	0%
Kingfish farm	20	0%	0%	100%	0%	0%
Ling	1,929	0%	0%	23%	77%	0%
Mackerel Spanish	530	0%	0%	100%	0%	0%
Marlin	60	0%	0%	100%	0%	0%
Morwong	2	0%	0%	100%	0%	0%
Perch Golden	400	0%	0%	100%	0%	0%
Roughy Orange	955	0%	0%	10%	90%	0%
Salmon Atlantic	3,205	3%	0%	69%	28%	0%
Sardines	20	0%	0%	0%	100%	0%
Shark	2,899	0%	0%	30%	70%	0%
Snapper	1,105	8%	0%	56%	36%	0%
Snapper Queen	320	0%	0%	100%	0%	0%
Swordfish	100	0%	0%	100%	0%	0%
Threadfin	580	0%	0%	100%	0%	0%
Trout Ocean	45	0%	0%	100%	0%	0%
Trout Rainbow	530	45%	0%	55%	0%	0%
Tuna	390	0%	0%	38%	62%	0%
Warehou	1,830	0%	0%	14%	86%	0%
Whitebait	150	0%	0%	0%	100%	0%
Whiting	300	0%	0%	0%	100%	0%
Whiting King G	40	0%	0%	75%	25%	0%

Much of the large volume trawl species such as flathead and blue grenadier were bought from the market auction while much of the aquaculture species such as salmon and barramundi, overseas and interstate fish, was bought from wholesalers. The MWFM accounted for about 60% of the total volume of 27 tonnes of fish listed in Table 4.2.13a

A small volume only was bought direct from fishers or farmers by fishmongers, with the notable exception of rainbow trout that was bought from Victorian farms. Atlantic salmon volumes are substantial but almost all it was bought through fish wholesalers.

Table 4.2.13b Source of main seafood species/product

Species	Total volume (Kg)	F/man / farmer	General W/saler	Fish W'saler /Co-op	Fish Mkt	Other
Crab Blue Swimmer	120	0%	0%	100%	0%	0%
Crab Mud	600	83%	0%	17%	0%	0%
Lobster	55	0%	0%	100%	0%	0%
Marinara	795	0%	0%	50%	50%	0%
Mussel meat	2	0%	0%	100%	0%	0%
Mussels	815	4%	0%	83%	13%	0%
Octopus	60	0%	0%	100%	0%	0%
Oysters	300	67%	0%	33%	0%	0%
Oysters Pacific	3,235	12%	0%	88%	0%	0%
Pipis	1,025	98%	0%	2%	0%	0%
Prawn Cooked	692	17%	0%	67%	15%	0%
Prawn Cutlet	67	0%	0%	100%	0%	0%
Prawn Green	2,237	2%	0%	98%	0%	0%
Prawn Meat	70	0%	0%	100%	0%	0%
Scallop Meat	407	6%	0%	86%	8%	0%
Seafood sticks	10	0%	0%	100%	0%	0%
Squid	290	0%	0%	83%	17%	0%
Squid Tube	225	0%	0%	100%	0%	0%

Fish wholesalers were by far the most important supplier of seafood products accounting for about two thirds of supply mainly sourced from interstate and overseas. The MWFM was but a minor source of seafood products. Fishers were the principal supplier of mud crabs and pipis while oysters were predominantly purchases from farmers.

There are no corresponding data for Melbourne sources of fish in 1991 for comparative purposes.

4.2.14 Fishmongers Perceptions Of Customers Expectations (Q.9)

Table 4.2.14 summarises the fishmongers perception of what customers look for in a store which sells fresh fish. *Clean outlet* stands out as the most important criteria followed by *has friendly staff working there*.

Selling *fresh fish* was deemed of intermediate importance while *offers Australian fish* bought out the greatest diversity of responses with the overall sentiment that it was important. Accessibility and *offers a wide variety* were not ranked as important.

Table 4.2.14 *Fishmongers perceptions of customer expectations (number of respondents)*

Factor	1 Very important	2	3	4	5	6	7 Not at all important	8 Don't know	Average score
1. Clean outlet / store	27	4	0	0	1	0	0	7	1.3
2. The outlet sells fresh fish & seafood (ie. not frozen)	20	8	1	3	0	0	0	7	1.6
3. Has attractively displayed fish and seafood	12	11	7	1	0	0	1	7	2.1
4. Offers Australian fish and seafood	12	9	7	0	1	1	2	7	2.4
5. Has staff informed about fish and seafood	15	10	4	1	1	0	0	8	1.8
6. Is easily accessible to the customer	9	12	1	7	0	1	0	9	2.3
7. Offers a wide variety of fish and seafood products	9	13	5	4	1	0	0	7	2.2
8. Has friendly staff working here	25	4	1	2	0	0	0	7	1.4
9. Has a good reputation for quality fish	18	11	0	1	0	0	0	9	1.5
10. The customer can be confident that fish or seafood sold as fresh has not been frozen	19	6	1	5	0	0	0	8	1.7

In 1991 *clean outlet*, a good reputation, *has friendly staff*, and *sells fresh fish* were the four very important factors and offers Australian fish was ranked as of medium importance as was *has friendly staff*. The Melbourne retailers' perceptions of what customers look for have therefore not changed much since 1991.

4.2.15 Retailers' Solutions For Increasing Sales (Q. 10a)

When asked what action the individual retailer could take to increase their sales one in six fishmongers (17%) responded with "don't know" ie was not able to offer a suggestion. This is far greater than the 2% with this response recorded in 1991.

The two most common responses were:

- *Lower prices/put on more price specials.*
- *More advertising/promotions*

Two more, almost equally common, responses were :

- *Maintain /improve quality of product*
- *Can't do much, with limited space available in shop*

Other responses were *increase space in shop*, upgrade equipment or *get better staff*.

This is almost identical to 1991 when the three common responses, were in order :

- Lower/ more reasonable prices/specials
- More advertising/promotions
- None

So fishmongers in Melbourne, and Sydney, still mostly suggest price specials as the best way of boosting sales and few look to better quality and service as an effective way to boost profitability.

4.2.16 Fishing Industry Actions To Increase Sales (Q10b)

Fishmongers asked to suggest actions that could be taken collectively by the seafood industry for more fish and seafood to be sold overwhelming responded with:

More seasonal & species recipe and information leaflets/in store tastings and promotion

Followed closely by:

Lower/control prices.

Then :

More advertising

Put out positive news to counter the adverse media publicity (re mercury in fish;/chemicals in prawns)

Other suggestions included:

- *More information about fish names*
- *Seminars for staff on product knowledge*
- *Better stock and quality control at the wholesale market*
- *Lift the restriction on customers handling fish*

The three most common suggestions in 1991 were, in order:

More advertising/promotion/information

More education on health features

Cheaper reduced prices/less fluctuations

4.2.16.1 Most successful consumer promotion or advertising (Q 12)

The promotion/advertising most applauded by fishmongers was the good oil /health benefits of fish brochures and publicity. This was an outcome of the CSIRO research on “the good oils” and media coverage following release of extensive printed material by the FRDC and CSIRO in August 1998.

It seems that there is a long standing national belief amongst retailers that the best initiative the seafood industry can undertake collectively is the regular release of consumer information leaflets. Interestingly the FRDC released a new series of consumer leaflets on seafood information and nutrition benefits in the second half of 2005 (after the field research was undertaken).

4.2.17 Potential Sales of Underutilised & Aquaculture Species (Q.11)

The quantitative results of the survey of respondent's outlook on the potential of selected wild catch and farmed species are shown in Table 4.2.17 below.

Table 4.2.17 Outlook for underutilised and aquaculture species

Species	No.	% of respondents optimistic	% of respondents optimistic in 1991
1. Pilchards	9	23	18
2. Albacore	7	18	Not examined
3. Farm prawns	6	15	16
4. Rainbow trout	3	8	27
5. Mussels Australian	8	20	14
6. Farm barramundi	10	25	35
7. None	16	40	25
8. Don't know	4	10	0

Many more fishmongers today are pessimistic about the outlook for the selected species with 40 percent saying no species had potential for increased sales versus 25% recorded in 1991. This decreased optimism on the wild and aquaculture species is reflected in the specific declining outlook for rainbow trout and farmed barramundi (falling from 27 to 8% and 35 to 25% optimism respectively). Nevertheless barramundi was the farmed species identified as having the greatest potential for further sales increase; the outlook for trout was overwhelming pessimistic as described below.

A more positive outlook was found for pilchards, and to a lesser degree mussels, while the outlook for farmed prawns remains as weak as that found in 1991. The increased optimism for pilchards and farmed mussels appears to be related to product and market developments in these two industries as outlined in the following pages.

Sydney fishmongers were mostly more optimistic about aquaculture products in 1999 than they were in 1991 and more optimistic for particular species than that indicated in the table above eg 45% for mussels, 42% for prawns and 39% for barramundi. The more confident outlook in Sydney probably reflects the success of these products as a result of the more active promotion of these in Sydney versus Melbourne.

The reasons behind the Melbourne fishmongers outlook for particular species are described below.

4.2.17.1 Comments On Wild Catch Species

Pilchards

The reasons offered for an expectation of increased sales fall into three categories :

*The fish is tasty when it is in good condition;
It sells well when we have it ;
It has increased in popularity since it has appeared in restaurant menus as a fillet.*

The issue of variable quality and irregular supply/availability were mentioned by several respondents as reasons constraining its market success.

The poor shelf life and high price was nominated as reasons why this species was not seen as having potential for increased sales.

These sentiments are similar to those recorded nationally in 1991 and in Sydney in 1999. what is noteworthy is the increased popularity of pilchards. The sale of deboned butterfly fillets since 1991 as a result of machine processing has raised consumer awareness of pilchards as a fresh table fish and contributed to the general optimism for the species.

Albacore

Reasons offered for an expectation of increased sales were :

*A good eating fish, the chicken of the sea;
Italians like it;
Still under-rated and cheap as fish or fillet
A good size cutlet
Cheaper than yellowfin (tuna).*

The “poor quality” of this fish was the most commonly cited reason (of four fishmongers) as to why fishmongers did not expect increased sales of albacore; some of this was related to a perception that it was an inferior species to yellowfin tuna because of its lighter colour and flavour. The handling and quality of albacore offered for sale in Melbourne is an issue warranting examination by industry particularly fishers and others at the beginning of the distribution chain.

The market outlook for albacore was not examined in 1991. The good eating quality and cheapness of this fish were also key reasons behind the positive outlook for this species in Sydney in 1999.

4.2.17.2 Comments on Aquaculture Species

The most striking finding in this study was a negative sentiment toward farmed products generally (15% of respondents); in addition to these another 5% commented negatively on the taste of farmed prawns while a further 5% compared farmed barramundi negatively to the wild product. Telling comments were “not a fan of aquaculture”, “we prefer wild, we are upmarket” and “can’t compare farmed to wild”.

In all, at least 25% of fishmongers interviewed could be described as “not fans” of aquaculture products; this negativity seems far wider than that noted in consumer focus groups and certainly was greater than that evident in Melbourne in 1991 and in Sydney in 1999.

Prawns

The level of positive outlook for prawn sales was almost identical to that recorded in 1991 (Table 4.2.17).

Three types of reasons were offered for an expectation of increasing sales of prawns:

A more reliable supply of fresh prawns compared to the wild catch
Available fresh (never frozen) most of the year
Advertising for farmed prawns such as Crystal Bay banana prawns.

Nevertheless the supply and quality of farmed prawns was reported as unreliable by several respondents. Equally important was the negative remarks on the taste (bland, tasteless or “chemical”) and quality of farmed prawns (“quality not there”) vis s vis the wild catch from South Australia, the dominant source of wild prawns for Melbourne.

Reasons offered by fishmongers for their pessimistic outlook on farmed prawn sales fit into three categories:

Price too high
Eating quality not satisfactory
Not known in Melbourne/in need of promotion

These reasons for a positive outlook on farmed prawn sales were also recorded nationally in 1991 and in Sydney in 1999 but a complete lack of positive comment on the taste of farmed prawns and the widespread negative perceptions of taste reported by fishmongers in Melbourne last year contrasts greatly with the widespread acceptance of farmed prawns by Sydney consumers and retailers between 1991 and 1999.

Rainbow Trout

Rainbow trout has long been farmed in Victoria and is widely stocked by fishmongers in Melbourne but it recorded the greatest decline in positive sentiment as well as the lowest level of positive outlook of all the farmed or wild catch species examined in this study (Table 4.2.17) .

The reasons behind the expectation of increased trout sales relate to the moderate price and the increasing variety of processed or value added products such as fillets and smoked goods which have been developed in recent years. Other fishmongers expressed qualified optimism, dependent on the availability of live fish and an expected increase in shoppers in particular areas.

The key negative feature reported as constraining trout sales was the large number of bones in this species and hence there was the suggestion of a need for new serving ideas to overcome this impediment. Another sentiment expressed by a couple of fishmongers was that trout was now quite well established in Melbourne and therefore difficult to increase sales. This sentiment was the strongest one expressed nationally in 1991.

In Sydney positive sentiment for farmed trout increased from 29 to 39% from 1991 to 1999.

Mussels

Mussels recorded a sizeable increase in positive outlook since the 1991 study in Melbourne (Table 4.2.17).

The outstanding reason cited for an expectation of increased mussel sales (by four fishmongers) was the availability of larger good quality well graded mussels from Tasmania. Other reasons proffered for an optimistic outlook on mussel sales were the introduction of special mussel display tanks and a qualified positive outlook dependent on a price fall.

In 1991 the popularity of mussels and ready availability were cited nationally as the key reasons why mussels sales were likely to grow and the positive outlook on mussels subsequently increased in Sydney from 23 to 45% in 1999.

The predominant reason for the pessimistic outlook of Melbourne fishmongers on mussels last year was the perception that mussels were now well known and the mussel demand was now sated. A minority view, proposed by one fishmonger was that the quality of mussels was too variable and unreliable.

Barramundi

Farmed barramundi was seen as having a positive sales outlook by a quarter of fishmongers interviewed, the highest level of positive sentiment in this study, but this is nevertheless a sizeable fall from the 35% recorded in 1991. This contrasts with the increasing positive sentiment on farmed barramundi recorded in Sydney between 1991 and 1999 (30 vs 39%).

Farmed barramundi was mostly reported as being a relatively new aquaculture product with room for further increase in sales summed up by the remark “*doing better but still room to expand sales*”; with a single contrary view that the barramundi market was “*now saturated*”. Other reasons cited for a positive outlook were:

Asians like it
A well known name fish.

The iconic name and popularity of this species were identified as the main reason for a positive outlook on farmed barramundi nationally in 1991 but in Sydney the positive outlook for barramundi increased to 1999 while optimism has declined amongst Melbourne fishmongers since the NSCS.

Price was explicitly mentioned as a critical factor in determining barramundi sales success with price falls likely to lead to greater sales. The dominant negative outlook on farmed barramundi was based on the respondents’ perception that the flavour was unsatisfactory (bland or no taste).

4.2.18 Outlook For The Next Five Years

The outlook for the next five years was mostly seen in a positive light with the majority of respondents forecasting an increase and with a small minority uncertain as indicated below. The numbers in parentheses are the results from the 1991 NSCS in Melbourne and they indicate that the percentage distribution of uncertainty, pessimism and optimism has changed little.

Outlook	Percentage of respondents
Increase	59 (51)
Stay the same	23 (22)
Decrease	10 (18)
Don't know	8 (10)

The outstanding reason cited for expecting an increase, was:

- Working harder with variety, quality and service to improve business

Two common reasons for optimism were

- Demand for fish is growing /probably because of health promotion
- Demand is growing because of local population growth

Other reasons nominated were

- growing reputation of the retail business
- meat getting dearer
- more farmed fish becoming available

The most common reason for expecting business to remain the same was that the retailer did not foresee any changes in the neighbourhood or the business. This was closely followed by the observation that the price of fish was an impediment to increased sales.

The high price of popular fish was the pre-eminent reason for pessimism. Another common suggestion was the lack of promotion, particularly of lesser know species like warehou. Other suggestions included:

- Adverse publicity about seafood
- More older people eating less food
- The particular (small) shopping area was dying

Sydney fishmongers in 1999 had a similar mix of optimism and pessimism with 60% expecting increases, 27 % expecting the same, 5% forecasting decreases and with 8% uncertain. The common reason for optimism then was:

People being more aware of the health benefits of eating fish

The 1999 Sydney study was undertaken not long after extensive publicity following the release of the CSIRO research on “good oils” (by the FRDC and CSIRO in August 1998).

4.2.19 Staffing Levels

Full time staff averaged less than three persons (2.8), usually the owner and at least one family member while part time staff averaged less than two (1.6). This is similar to the 1991 findings of three and 1.7 respectively.

Many operators noted that they were working long hours for little return.

4.3 Findings From Fish And Chips And Take Aways Survey

This section presents the detailed findings from interviews with the managers of 40 fish and chips and take away businesses (28 and 12 outlets respectively).

4.3.1 Respondent's Position in The Business (Q. 1)

Almost all interviewees were owner operators of the business: 39 of 40.

All but one of the 28 fish and chips stores interviewees were owner/managers of single outlets while the other was a store manager for a company operating several stores.

All of the twelve interviews at take away outlets were an owner/manager of a single business.

This percentage of owner operators seems markedly higher than the 68% recorded in Melbourne in 1991 but the 1991 Melbourne results were not so conclusive because of the 32% of respondents listed as did not answer/don't know.

4.3.2 Main Problems In Selling Fish And Seafood (Q.2)

Eighty percent of respondents reported that they experienced no main problems in selling fish and seafood. The other eight respondents (20%), all operators of fish and chips outlets, nominated one or more problems.

The rising price/high price of fish was the outstanding issue, nominated by half of these operators (10% of respondents overall). Other issues nominated were:

- dealing with the customers' poor knowledge of fish (two mentions),
- increasing competition from convenience stores open for extended hours (two mentions)
- the poor handling and quality of fish at the Footscray wholesale market (one mention) the mislabelling of fish prevalent in the seafood trade citing the various fish sold under the name of butterfish (single mention)
- ageing population with low spending power (single mention)
- increasing parking restrictions in front of their store (single mention).

These findings are similar to those in the 1991 study when 61% reported that they had no main problems in selling fish and seafood and that high fish prices were the outstanding issue for those nominating a main problem (21% of respondents overall). In the Sydney study in 1991 similar problems with high fish prices were reported.

When prompted about the significance of possible problems with the next question it became clear that many more of these operators were indeed facing serious problems as shown in data in the following section, and that the high price of fish and seafood was the main concern. The relatively short time that about 10% of respondents had been in the business, some for several weeks only, was probably a contributory factor for some of the difficulties experienced.

4.3.3 Significance Of Possible Problems In Selling Fish And Seafood (Q.3)

The table below summarises the data on the significance of possible problems in selling fish and seafood. The large numbers/percentages of *don't know* reflect the high incidence of new operators with little experience as well as a number who had a poor command of English language and also not offering an opinion.

Table 4.3.3 Significance of possible problems in selling fish and seafood

Statement / Factor	Very Signif	Quite Signif	Not very signif	Not a problem	Don't know
	%	%	%	%	%
1. The variable quality of fish and seafood available	3	3	5	47	42
2. The unavailability of staff with experience in handling and selling fish and seafood	5	3	16	29	47
3. The lack of knowledge of customers in preparing and cooking fish and seafood	5	5	18	21	50
4. Uncertainty about whether the fish bought are correctly named	3	0	16	32	50
5. The difficulty of selling fish and seafood if it is labelled frozen	0	8	8	18	66
6. Unfavourable publicity about fish and seafood	5	11	18	18	47
7. Customers dislike buying fish because of the bones	11	21	8	13	47
8. Fish is too expensive to buy	34	13	8	8	37
9. Seafood is too expensive to buy	37	8	5	13	37
10. The low margins necessary to remain competitive	16	16	8	18	42
11. Difficulty getting continuous supply at steady prices	8	11	8	29	45
12. A lack of training in fish handling and hygiene	0	3	11	37	50
13. Difficulty getting continuous supply of a good range of fish	3	13	38	37	50

Another reason for a large number of don't know response is the reluctance of take away operators to offer an opinion as they did not take much notice of fish sales because fish and seafood represented a small part of their income.

The combined impact of the inexperience/language difficulty/reluctance is best illustrated by the question dealing with the likely problem of selling seafood if it is labelled as frozen which was answered as *don't know* by two out of three interviewees and was perceived as significant problem by several respondents only when in fact Australian consumers have a clear preference for fresh fish rather than frozen, as discussed in volume II.

The lack of uncertainty about whether fish bought is correctly labelled also deserves comment because it was evident that much of the fish on sale in some stores was incorrectly labelled. One interviewee who reported concerns and problems with fish labelling had only recently bought the business and had been working with names suggested by the wholesaler as "OK" even though they were not the names on the cartons of the fish fillets.

While the high price of fish and seafood was the outstanding problem for operators of fish and chips and the takeaway outlets low margins were not so widespread a problem and opinion on this was somewhat polarised.

The polarised opinion on margins in selling fish appears related to the condition of the store: those reporting difficulty with margins were commonly in a poor physical condition and in need of renovation while those not experiencing price and profit problems were mostly the newer smarter stores or those with experienced operators.

A third of the take away outlets were clearly stores that have traditionally relied on the fish and chips trade as the main source of income but were now run down physically or otherwise uninviting. About one in eight of the fish and chips outlets had a modern bright fit out while an equal proportion were dull, dark and in need of renovation.

The low impact/significance of unfavourable publicity reported by fish and chips/take away operators is remarkable because it was a significant problem for many fishmongers and supermarket operators and consumers reported it as an issue negatively affecting their consumption of fish (Volume II). The fish and chips and take way operators assessment may be a result of poor interaction or weak communication with their customers due to inexperience and/or language difficulty.

Also noteworthy is the low significance reported for difficulty in getting staff with experience in handling and selling fish because this too has been a widespread longstanding problem with other categories of retailers of fish and seafood. This can be explained by the widespread reports from interviewees that staffing was not a problem because the business was staffed by family members, albeit with some working extraordinarily long hours.

4.3.4 Consumer Trends Observed By Retailer (Q. 11a)

Retailers were asked if they noticed any of the five trends listed in the table below and later were asked if there were any other trends or concerns in food preferences with their customers.

Table 4.3.4 Observations on consumer trends.

Trends	Yes	No	Don't know
1. More concerned about impact of pollution on seafood safety	7.5%	60%	32.5%
2. More concern about mercury in fish	27.5%	45%	27.5%
3. Concerned about the safety of food	2.5%	70%	27.5%
4. More concern about the accuracy of the name of fish sold	5%	65%	30%
5. More concern about overfishing or the sustainability of commercial fishing.	5%	70%	25%

The consumer concern about mercury in fish was the issue most noticed by store operators while other issues/trends were noted by less than 10% of the 40 interviewees.

The low figures relating to impact of pollution on seafood safety are somewhat at odds with the observations regarding mercury but as in the earlier question on the significance of possible problems there was a large percentage of uncertain respondents on all five issues which again suggests that many operators have little interaction with customers and are not well aware of issues concerning their customers.

In 1991 this *impact of pollution* and the *concern about the accuracy of the name* questions were also asked and these trends had been observed by an average of 38% and 40% of outlets across the nation.

Most operators who observed sales downturns after media publicity on high mercury levels in some fish reported that sales took about a month or so before they got back to normal levels.

When asked if they had observed any other trends most respondents said no. With fish and chips operators 79% observed no other trends while with take away operators the response was no or don't know because they mostly had little interest in their predominantly insignificant fish business.

The trends noted by observant fish and chips operators were extremely varied, as listed below, but insufficient to draw any significant conclusions :

- More price conscious, looking for value
- Customers more fussy, wanting more healthier fish and chips
- Greater interest in healthier food, such as vegetarian
- Less demand for uncooked fish
- Suppliers offering more product information leaflets
- Basa fillets have taken on and selling well

In 1991 too few Melbourne outlet operators had noticed any trends or concerns in their customers food preferences. In Sydney in 1999 there were similar findings with high incidence of no and don't know to the nominated trends and no other obvious trend identified by the interviewees.

4.3.5 Sale Of Uncooked Fish And Seafood (Q10 and 15a)

Most Melbourne fish and chips and takeaway store operators have ceased selling fresh fish; in 1991 20 of the 23 fish and chips outlets (87%) sold uncooked fish but in the present study this had fallen to five out of 28 outlets (18%). Several fish and chips outlet operators interviewed still offer a selection of fresh seafood but most only offer the few fillets and seafood they stock for cooking purposes, and so flake/shark fillets was the most important item sold raw as it is the most common fish sold cooked. Take away outlets did not offer raw fish or seafood for sale.

The percentage contribution of raw fish and seafood to sales turnover ranged from zero to 30% but averaged only one percent. In 1991 the average was 6% with a range from zero to 40%.

The fish and chips stores in Sydney seemed to be in a stronger position in regard to uncooked fish sales, with 47% still selling uncooked fish and seafood in 1999, even though it had fall from 57% since the 1991 national seafood consumption study.

4.3.6 Main Fish And Seafood Buy/Sell Statistics

The ten main species (six fish and four seafood) made up from 66% to 100% percent of the stores weekly turnover with the fish and chips shops having an average of 97 % while the takeaways averaged 100 %. These main species made up the total range for some stores: all of the take away outlets, and more than half of the respondents reported fewer than four main seafood species, mostly the take away outlets.

Table 4.3.6 Weekly purchase volumes for the main fish and seafood species.

	Average	High	Low
Weekly volumes of main 6 fish species (kg)	82	430	2
Weekly volume of main 4 seafood species (kg)	24	290	0
Total	106		

The average weekly purchase volume for the sector overall was 82 kg for the six main fish and 24 kg for the four main seafoods. It was 116 kg of fish for fish and chips outlets versus 17 kg for takeaways, while for seafoods it was 28 kg and 12 kg per week respectively.

Weekly sales values ranged from \$100 to \$20,000 with an average of \$4298; the high turnover outlets were typically bright modern stores while those with low figures were invariably older/run down stores. This is a 284% increase on the \$1118 average recorded in the 1991 study.

Sales figures for fish and chips outlets were \$6256 per week versus an average of \$600 of fish and seafood per week for take away outlets, however some of the bright modern take away outlets sold more fish than the dilapidated fish and chips outlets. In Sydney in 1999 average sales for fish and chips outlets were recorded as \$10,786.

4.3.7 Main Fish Species Purchase Volumes (Q.6a)

Shark is by far the outstanding fish in Melbourne sales because of the wide geographical spread it has as a best seller as well as the high average sales per store in both fish and chips and take away outlets (table below). This popularity is further attested by the fact that some outlets offer a *special flake* as well as the ordinary cut/variety and the prevalence of words such as *shark paradise* in promotional literature or business names even where fish is but a small part of the business.

Table 4.3.7 Main fish species weekly purchase volumes

Species	*Number of shops	Total volume # (Kg)	Average* volume (Kg)	Low volume (Kg)	High Volume (Kg)
Barracouta	7	81	12	2	55
Basa	1	7	7	7	7
Bream	1	2	2	2	2
Butterfish^	2	10	5	5	5
Dory	3	45	15	5	20
Dory, John	1	5	5	5	5
Dory, King	1	3	3	3	3
Flathead	7	167	24	2	100
Flounder	5	13	3	1	5
Gemfish	1	5	5	5	5
Grenadier Blue	26	322	12	2	50
Hake	5	152	30	2	120
Ling	4	20	5	1	10
Morwong	1	5	5	5	5
Roughy Orange	6	97	16	2	80
Salmon Atlantic	3	45	15	5	30
Shark	37	1,942	52	2	220
Shark Battered	1	8	8	8	8
Snapper	4	37	9	2	20
Warehou	7	162	23	2	80
Whiting	15	124	8	2	30
Whiting, King George	7	51	7	2	14

* Some averages are based on small numbers of stores and so should be used with caution

The total weekly sales of the 40 stores would be higher than the figure listed here because the species may be sold regularly but not be one of the six main sellers for the store and so not accounted for.

^ This is most likely to be escolar

Blue grenadier and whiting are also main sellers in many outlets but their average weekly sales volumes are nowhere near those of shark. As indicated earlier with fishmongers the data in the table are purchase statistics rather than the true volume sold, because of wastage incurred when filleting.

Shark and grenadier are in effect the only two important species in take away outlets because other species were only reported in one outlet each; many take away outlets were only able to nominate three or four main species. Fish and chips' average purchase volumes were typically greater than those for take away outlets for all species.

Warehou and flathead have only modest distribution as main sellers but have moderate levels of average sales. Hake which is predominantly imported is not so commonly a main seller but enjoys substantial sales volumes where it is sold.

The role of shark and whiting in Melbourne trade has not changed much since 1991 but blue grenadier has become far more common. Warehou has become less widespread as a main seller and orange roughy has declined in importance disappearing completely from take away outlets whereas it had the second highest average sales per store and was a main seller in two out of five fish and chips take away category of outlets. The trend to boneless fillets has seen barracouta and bream lose prominence since 1991 when they were main sellers in 37% and 21% of outlets.

Also of interest in table 4.3.7 is the butterfish/escolar as a main seller in two outlets.

Basa is an interesting new entrant to the main sellers list as it has only been imported, as fillets principally from Vietnamese aquaculture, over the past five years and has made stronger inroads in the supermarket sector and fishmongers sales.

Atlantic salmon is the only Australian aquaculture product that makes the main sellers list with this category of retailer, but sales apparently remain in small volumes only and Australian aquaculture makes little contribution to this sector.

The Melbourne fish and chips main species list differs markedly from the 1999 Sydney sales picture where flathead, hake and blue grenadier were the three important main sellers and shark of no great importance. Also noteworthy: Nile perch was reported as a main seller by a handful of stores and farmed salmon had attained a strong position by 1999 in Sydney whereas Nile perch was not reported as main seller at all and salmon is of little importance in fish and chips outlets.

4.3.8 Reasons For Buying/Selling Main Fish Species (Q. 9)

The reasons offered for the success of main sellers are detailed in the following table but the key success factors for fish and chips operators can essentially be summed up as :

- Pleasing taste
- Traditional/familiar /favourite
- Boneless fillet
- Attractive colour of flesh : white or pink
- Low price
- Up market image

These are very much like the success factors identified by fishmongers.

Table 4.3.8 Reasons suggested for buying /selling main sellers

<i>Species</i>	<i>Reasons</i>
Barracouta	Cheap good value; good eating
Dory	The name sells it; excellent eating
Flathead	Traditional favourite; eats well
Grenadier, blue	Well known now, used to it; tasty, juicy, soft.
Ling	Boneless and tasty
Roughy, orange	Deep sea fillet; white flesh and nice tasting
Salmon Atlantic	Lots of promotion; nice pink colour; healthy omega 3s
Shark/flake	Victorian favourite, used to it; boneless, good for kids; great taste, not so strong
Warehou	Sells well skinless boneless; a cheap one
Whiting, King George	Up market fish, popular with oldies, top quality; very tasty

4.3.9 Fish Form Bought (Q.5)

Almost all of the main selling fish are bought predominantly in the fillet form (table below) with very little filleted in house. With fish and chips outlets fresh fish is still common but take way outlets mostly bought frozen. Imported product such as hake whiting and basa fillets are invariably frozen.

Table 4.3.9. Fish form bought

Species	Total volume (Kg)	Live	Whole	Fillet	Cutlet	Headed & gutted	Other
Barracouta	81	0%	0%	100%	0%	0%	0%
Basa	7	0%	0%	100%	0%	0%	0%
Bream	2	0%	0%	100%	0%	0%	0%
Butterfish	10	0%	0%	100%	0%	0%	0%
Dory	45	0%	0%	89%	0%	11%	0%
Dory, John	5	0%	0%	100%	0%	0%	0%
Dory, King	3	0%	0%	100%	0%	0%	0%
Flathead	167	0%	0%	100%	0%	0%	0%
Flounder	13	0%	0%	100%	0%	0%	0%
Gemfish	5	0%	0%	100%	0%	0%	0%
Grenadier Blue	322	0%	0%	84%	0%	16%	0%
Hake	152	0%	0%	100%	0%	0%	0%
Ling	20	0%	0%	100%	0%	0%	0%
Morwong	5	0%	0%	100%	0%	0%	0%
Roughy Orange	97	0%	82%	18%	0%	0%	0%
Salmon Atlantic	45	0%	0%	11%	0%	0%	89%
Shark	1,942	0%	0%	93%	0%	7%	0%
Shark Battered	8	0%	0%	100%	0%	0%	0%
Snapper	37	0%	0%	100%	0%	0%	0%
Warehou	162	0%	62%	38%	0%	0%	0%
Whiting	124	0%	0%	100%	0%	0%	0%
Whiting, King George	51	0%	0%	90%	0%	0%	10%

The *other* category (for salmon) refers to gilled and gutted fish.

In 1991 more of the fish supply was bought for in house filleting and while figures are not available for Melbourne the national average data suggests that the percentage of shark bought as fillet by Melbourne fish and chips/take away operators was less than 60%.

A change not evident in the tables is the shift from fresh shark fillet to an increasing use of frozen shark from southern as well as northern waters of Australia, and overseas.

4.3.10 Main Seafood Purchase Volumes (Q. 6a)

The table below summarises the statistics on the main selling seafood species/products and an examination reveals that the variety is virtually limited to five species groups namely scallops, prawns, squid, mussels and oysters.

Many stores, especially the take aways, only sold about two varieties of seafood while some fish and chips outlets were not able to nominate four main sellers; mussels, octopus and oysters were not nominated as main sellers by any take away outlets.

It is clear that scallop meat and seafood sticks are the most common items while squid tubes are arguably more important because of their total volume in the trade. A similar scenario prevailed in Melbourne in 1991 with these species heading the main sellers list in the same order and with similar relative importance, although they have recorded an increase in average volumes per outlet perhaps because of the diminished range of seafood items typically available. The disappearance of crayfish/lobster from the main seller list is a noteworthy loss.

Table 4.3.10 Main seafood weekly purchase volumes

Species	*Number of shops	Total volume (Kg)	*Average volume (Kg)	Low volume (Kg)	High Volume (Kg)
Mussel Meat	2	13	7	3	10
Mussel Meat Jars	1	2	2	2	2
Mussels	2	4	2	2	2
Octopus	1	5	5	5	5
Oyster	2	25	13	5	20
Prawns	1	10	10	10	10
Prawn Crumbed	2	7	4	2	5
Prawn Cutlet	6	100	17	2	80
Prawn Meat	1	2	2	2	2
Scallop Meat	28	233	8	1	55
Scallop Meat Crumbed	1	15	15	15	15
Seafood Sticks	25	109	4	1	15
Squid Battered/Crumbed	11	53	5	2	10
Squid Tube	14	279	20	3	150
Squid Reformed	2	9	5	2	7

*The average is based on a variable number of outlets so caution is needed when this number is small.

Oysters are the only Australian aquaculture product that makes the main seller list of seafood but they account for a small volume only.

Although there has been almost no innovation in the variety of fish/seafood products offered by fish and chips and take away outlets there has been a remarkable extension of non fish/seafood range with the addition of pizza, vegetarian, wraps, and Asian dishes to offerings of some the take away outlets.

The Melbourne findings are different to those in Sydney in 1999. Scallops and crayfish were not as prominent in the Sydney fish and chips outlets where prawns and squid/calamari were the ubiquitous strong sellers as were octopus but at a lower level.

Another notable difference in Sydney and Melbourne fish and chips trade is the stronger position of oyster and mussel sales in the former even though mussels are sourced from the southern states.

As indicated earlier there is also a fundamental difference in that many fish and chips outlets in Sydney have substantial sales of raw fish for in home cooking and consumption.

4.3.11 Reasons For Buying Selling Main Seafood Species (Q. 9)

The reasons suggested for buying and selling the various main sellers are detailed in the following table. However it is clear that *taste* is the outstanding success factor across all price categories while a perception of *delicacy* or *treat* is an important part of the success of the more expensive seafood such as prawn products and scallops.

Table 4.3.11 Reasons proposed for buying/selling main sellers

<i>Species/product</i>	<i>Reasons</i>
Octopus	No bones; taste good
Oysters	A treat; nice taste
Prawns	A treat; good taste; great for barbeque
Scallops	A favourite seafood in Melbourne; a delicacy; very sweet
Seafood sticks	Cheap and tasty
Squid/calamari	Delicious; no bones; kids love them fried

4.3.12 Seafood Form Purchased (Q. 5)

The two key seafood items scallops and prawns are bought predominantly as meat and cutlet respectively. Seafood sticks in the other category are a stick manufactured from fish flesh.

All of the items in the following table are bought in a ready to cook or ready to eat form and typically sold as is or deep fried. There are no new seafood products in the list since 1991.

Table 4.3.12 Seafood form purchased

Species	Total volume (Kg)	Live	Whole	Fillet	Cutlet	Headed & gutted	Other
Mussel Meat	13	0%	0%	0%	0%	0%	100%
Mussel Meat Jars	2	0%	0%	0%	100%	0%	0%
Mussels	4	0%	0%	0%	0%	0%	100%
Octopus	5	0%	100%	0%	0%	0%	0%
Oyster	25	0%	100%	0%	0%	0%	0%
Prawns	10	0%	0%	0%	0%	0%	100%
Prawn Crumbed	7	0%	0%	0%	0%	0%	100%
Prawn Cutlet	100	0%	0%	0%	2%	0%	98%
Prawn Meat	2	0%	0%	0%	0%	0%	100%
Scallop Meat	233	0%	0%	0%	3%	1%	95%
Scallop Meat Crumbed	15	0%	0%	0%	0%	0%	100%
Seafood Sticks	109	0%	0%	0%	0%	1%	99%
Squid Battered /Crumbed	53	0%	0%	0%	0%	0%	100%
Squid Tube	279	0%	0%	0%	0%	1%	99%
Squid Reformed	9	0%	0%	0%	22%	0%	78%

4.3.13 National Origin Of Fish And Seafood (Q. 7)

Australian fish made up 90% of the total volume of the main species sold by stores, principally because of the strong dominance of Australian shark/flake in the Melbourne fish and chips/take away trade. In Sydney and elsewhere in Australia hake and other imported fish fillets have a larger market share.

Flathead another favourite was all of Australian origin. Warehouse another species landed in Melbourne from the South East Trawl fishery was also exclusively Australian.

Basa was all imported, as this species is not found in Australia. Other imported product also accounted for very small volumes because of the pervasive popularity of shark in Melbourne.

Table 4.3.13a. National origin of fish sold

Species	Total volume (Kg)	Imports	Australian	Don't know
Barracouta	81	0%	100%	0%
Basa	7	100%	0%	0%
Bream	2	0%	100%	0%
Butterfish	10	0%	100%	0%
Dory	45	0%	100%	0%
Dory, John	5	0%	100%	0%
Dory, King	3	0%	100%	0%
Flathead	167	0%	100%	0%
Flounder	13	0%	100%	0%
Gemfish	5	0%	100%	0%
Grenadier Blue	322	8%	92%	1%
Hake	152	86%	14%	0%
Ling	20	0%	100%	0%
Morwong	5	100%	0%	0%
Roughy Orange	97	0%	100%	0%
Salmon Atlantic	45	0%	100%	0%
Shark	1,942	7%	89%	4%
Shark Battered	8	0%	100%	0%
Snapper	37	27%	73%	0%
Warehouse	162	0%	100%	0%
Whiting	124	27%	69%	4%
Whiting, King George	51	0%	100%	0%

The provenance of Victoria's fish supply to the fish and chips/take away sector has not changed much since 1991 because trade then was dominated by Australian shark too, with Australian orange roughy the second most important item then. In 1991 Australian fish made up more than 80% of the main fish species turnover, but basa was unknown.

The seafood sales statistics are dominated by scallop meat which is mostly imported, as indicated in the table below. Overall though, Australian product accounted for approximately 40% of trade volume with 60% imports because of the very high level of imported scallops, principally from Japan. In Sydney in 1999 Australian seafood accounted for 73% of sales while Australian fish made up 60% of fish sales.

Other important items such as squid tubes were a mix of Australian and imported product with the latter accounting for about two thirds of volumes sold while with prawn cutlets imports made up about 90% of trade.

The sales volumes of other products were too small to be of any indicative value.

Table 4.3.13b. National origin of seafood sold

Species	Total volume (Kg)	Imports	Australian	Don't know
Mussel Meat	13	100%	0%	0%
Mussel Meat Jars	2	0%	100%	0%
Mussels	4	0%	100%	0%
Octopus	5	0%	100%	0%
Oyster (dozens)	25	0%	100%	0%
Prawns	10	0%	100%	0%
Prawn Crumbed	7	100%	0%	0%
Prawn Cutlet	100	88%	10%	2%
Prawn Meat	2	0%	100%	0%
Scallop Meat	233	96%	4%	0%
Scallop Meat Crumbed	15	100%	0%	0%
Seafood Sticks	109	49%	46%	5%
Squid Battered /Crumbed	53	4%	83%	13%
Squid Tube	279	37%	63%	0%
Squid Reformed	9	100%	0%	0%

The provenance of the seafood sold by fish and chips and take aways too seems not to have changed noticeably since 1991 because of the high level of imports of the various prawn products and seafood sticks then which were the second and third most important seafood items (after scallops).

The declining fortunes of the scallop fishery around Victoria and Tasmania in the 1990s has seen the market share of Australian commercial scallops fall to be replaced by the similar looking scallops with roe from Japan.

4.3.14 Source Of Fish And Seafood (Q. 6b)

Fish wholesalers were the most common supplier of seafood items with general wholesalers the second most common source suppliers as indicated in the table below. Respondents were mostly reliant on delivery of product and other than a few fish and chips operators were not patronising the fish auction at Footscray other than for fish such as flathead, orange roughy and warehouse for filleting.

Many fish and chips operators had the wholesalers/providores at the MWFM as sources of supplies, but take way outlets mostly bought their most of their fish and cooking materials “over the phone” from the general wholesalers.

Table 4.3.14a. Sources of fish supplies

Species	Total volume (Kg)	F/man / farmer	General W/saler	Fish W'saler /Co-op	Fish Mkt	Other
Barracouta	81	0%	9%	91%	0%	0%
Basa	7	0%	0%	100%	0%	0%
Bream	2	0%	0%	100%	0%	0%
Butterfish	10	0%	50%	50%	0%	0%
Dory	45	0%	0%	100%	0%	0%
Dory, John	5	0%	0%	100%	0%	0%
Dory, King	3	0%	0%	100%	0%	0%
Flathead	167	0%	0%	40%	60%	0%
Flounder	13	0%	32%	68%	0%	0%
Gemfish	5	0%	0%	100%	0%	0%
Grenadier Blue	322	0%	16%	72%	12%	0%
Hake	152	0%	79%	21%	0%	0%
Ling	20	0%	0%	100%	0%	0%
Morwong	5	0%	0%	100%	0%	0%
Roughy Orange	97	0%	0%	18%	82%	0%
Salmon Atlantic	45	0%	0%	100%	0%	0%
Shark	1,942	0%	18%	77%	5%	0%
Shark Battered	8	0%	100%	0%	0%	0%
Snapper	37	0%	19%	81%	0%	0%
Warehou	162	0%	0%	51%	49%	0%
Whiting	124	0%	38%	62%	0%	0%
Whiting, King George	51	0%	10%	90%	0%	0%

There were no direct purchases of fish from fishers or farmers by any fish and chips or take way foods operators, unlike some of the fishmongers who seek out direct sales but this difference in buying behaviour probably reflects the much small volumes used by the former category of outlets.

Table 4.3.14b Sources of seafood

Species	Total volume (Kg)	F/man / farmer	General W/saler	Fish W'saler /Co-op	Fish Mkt	Other
Mussel Meat	13	0%	23%	77%	0%	0%
Mussel Meat Jars	2	0%	0%	100%	0%	0%
Mussels	4	0%	50%	50%	0%	0%
Octopus	5	0%	0%	100%	0%	0%
Oyster	25	0%	0%	100%	0%	0%
Prawns	10	0%	0%	100%	0%	0%
Prawn Crumbed	7	0%	29%	71%	0%	0%
Prawn Cutlet	100	0%	2%	98%	0%	0%
Prawn Meat	2	0%	0%	100%	0%	0%
Scallop Meat	233	0%	14%	86%	0%	0%
Scallop Meat Crumbed	15	0%	100%	0%	0%	0%
Seafood Sticks	109	0%	39%	61%	0%	0%
Squid Battered / Crumbed	53	0%	26%	74%	0%	0%
Squid Tube	279	0%	23%	77%	0%	0%
Squid Reformed	9	0%	0%	100%	0%	0%

Fish wholesalers were the most common supplier of seafood items with general wholesalers the second most common source. As with fish purchasing, respondents were mostly reliant on delivery of product and were not in the habit of shopping at the MWFM because almost all of the seafood items were frozen or otherwise preserved.

There were no direct seafood item purchases from fishers or farmers.

From the national data on the source of fish and seafood supplies there does not appear to have been any notable changes in the sourcing of supplies since 1991.

4.3.15 Retailers' Perceptions of Customers Expectations (Q. 10c)

The retail operators perception of what customers look for in a store are summarised in the table below. *Has friendly staff* and *clean outlet/store* were perceived as the two most important factors for their customers when selecting a fish outlet to buy from. The response to *Has staff informed about fish and seafood* and *Offers Australian fish and seafood* showed the widest spread of opinion but with most thinking these points were important.

In 1991 *clean outlet/store, is easily accessible to customers, reputation for quality fish* and *Has friendly staff* were the four outstanding important factors while *Offers Australian fish and seafood* polarised opinion back then too.

Table 4.3.15 Retailers' perceptions of customer expectations (number of respondents)

Factor	1 . Very important	2 . .	3 . .	4 . .	5 . .	6 . .	7 . Not at all important	8 . Don't know	Average score
1. Clean outlet / store	20	1	0	0	1	0	0	16	1.2
2. The outlet sells fresh fish & seafood (ie. Not frozen)	11	2	2	1	1	0	1	20	2.1
3. Offers Australian fish and seafood	10	2	2	1	2	1	1	19	2.5
4. Has staff informed about fish and seafood	10	2	2	2	3	0	3	16	2.9
5. Is easily accessible to the customer	12	3	2	3	1	0	0	17	2.0
6. Has friendly staff working there	20	1	0	1	0	0	0	16	1.2
7. Has a reputation for quality fish and seafood	12	3	0	1	0	0	0	22	1.4
8. The customer can be confident that fish or seafood sold as fresh has not been frozen	12	2	0	3	0	0	1	20	1.9

Sydney operators in 1999 had essentially similar perceptions to their Melbourne counterparts on what customers look for when selecting where to buy fish and seafood.

4.3.16 Retailers Solutions For Increasing Sales (Q. 12a)

The great majority of interviewees could not offer any suggestions on what actions they could take to increase their fish sales. This weak response may be understandable for take away operators with little interest in fish sales but it is noteworthy that two out of three (64%) fish and chips operators who do rely on fish and chips for the success of their business seemingly have little idea on how to improve.

The most common solutions offered were various promotion and local advertising initiatives revolving around:

More in store promotions and tastings

Give out more information leaflets to educate consumers on fish

An improvement in the quality of fish sold, improving the service provided and lowering prices were each suggested by only one respondent.

In Melbourne in the 1991 study on fish and chips and take away outlets the three most common responses were, in order:

- Lower prices
- Nothing /don't know
- Increase demand

The major change since 1991 therefore seems to be a decrease in the proportion of operators seeing lower prices as the solution but a very marked increase in the proportion of operators with little or no idea on how to go about improving their business.

An increase in the proportion of operators with no ideas on how to improve the sales figures was noted in Sydney in 1999 since the national seafood consumption study and as with Melbourne operators promotional initiatives were the most common suggestion.

4.3.17 Seafood Industry Actions To Increase Sales (Q. 12b)

Fish and chips operators were more forthcoming in offering suggestions for actions that the seafood industry could take collectively to increase fish and seafood sales from the store. Take away operators again were disinterested in offering any suggestions when asked what action the seafood industry could take to help them improve sales.

With fish and chips operators there was one outstanding suggestion and that was to constrain or lower fish prices. Four out of ten respondents (39%) to this question offered this solution while 14% had none to offer which is similar to the 45% for *reduce prices* and 16% no suggestions/don't know reported in 1991 from the fish and chips and take away stores.

The next most common solution offered can be summed up as *more promotion/information* which came from 21% of the 28 fish and chips operators. Their suggestions were to distribute consumer leaflets to raise interest in fish, to offer new preparation ideas and to combat adverse publicity about mercury in fish.

In Sydney in 1999 the suggestions were, in order:

- More advertising and promotion
- Lower prices
- No suggestions

So lower prices and industry wide promotion remains as the retailer's choice of initiatives for industry to take up.

4.3.18 Potential Sales Of Underutilised And Aquaculture Species (Q. 13)

The following table summarises the findings on the operators' assessment of the potential for increasing sales of selected underutilised wild and aquaculture species for this study and in 1991.

This table clearly shows that the vast majority feel that none of these species are capable of increased sales, while most of the remainder are uncertain, a situation remarkably similar to that found in 1991.

Table 4.3.18 Potential for increased sales of underutilised species

Species	Capable of increased sales (% of respondents)	Capable of increased sales (% of respondents) 1991
1. Pilchards	0	5
2. Albacore	2	Na
3. Farm prawns	0	5
4. Rainbow trout	0	5
5. Mussels Australian	0	8
6. Farm barramundi	0	5
7. None	79	68
8. Don't know	20	3

The main reason for not expecting increasing sales of these species is that almost all stores were not offering uncooked fish while take away outlets were unlikely to even offer ready to eat products such as boiled farmed prawns because they were not interested in stocking a product seemingly unknown and unwanted by Melbourne consumers.

Interestingly, several respondents commented that farmed product was not well known nor well regarded in Melbourne despite the substantial sales levels of farmed salmon, mussels, oysters and rainbow trout in the Melbourne supermarket and fishmongers trade.

Furthermore as shown in Volume Two the farmed/wild origin of seafood is not an important consideration for most consumers, who seem more adventurous than the retailers presume.

The taste of farmed prawns and of barramundi in particular was questioned (ie not perceived as satisfactory) by interviewees while these products were enjoying strong sales in many Melbourne and Sydney fishmongers and supermarket outlets.

Several also commented that albacore was unknown in Melbourne and that few people knew *what to do with pilchards*.

4.3.19 Outlook For Next Five Years (Q.14a)

When asked for their outlook on sales over the next five years the response was mostly *stay the same* or *increase*, much the same response as found in 1991, as shown below:

Stay the same	36%	(32% in 1991)
Increase	33%	(29%)
Decrease	10%	(13%)
Don't know	21%	(26%)

The price of fish was seen as the key factor determining the outlook of many respondents, particularly the pessimists, much as it was in 1991.

The high price of fish and increasing competition from other food outlets were identified as factors likely to lead to decreased sales while renovations or business improvements and positive changes to the local population demographics were cited as likely to lead to increased sales. One respondent thought that increased demand for take away food was likely to be a positive influence while another thought that increased interest in healthy eating would lead to increased sales for him,

The high price of fish and the absence of any expected changes to the neighbourhood or the business were the common reasons cited by those expecting sales to stay the same over the next five years.

In Sydney in 1999 there was a similar ratio of optimism to pessimism and expectations of no change as seen in this study in Melbourne.

4.3.20 Staffing Levels

Full time staff averaged two persons, usually the owners/family members while part time staff average was between one and two. This is almost identical to the 1991 findings of two and one respectively.

A noteworthy remark made by many operators was that they were working long hours for little return and would not remain open were it not for the input of family members.

4.4. The Seafood Supply Chain

4.4.1 Product Flow And Market Behaviour

The Melbourne Wholesale Fish Market in Footscray is the focal point of the fish and seafood trade in Victoria because the auction agents and the provedores (ie wholesalers) provide the main market for the landings from the Victorian State fisheries and much of the South East Trawl fishery

The volume of frozen product sold by the auction market is a negligible part of Victorian consumption because much of the frozen product consumed is imported and sold by MWFM provedores and other wholesalers around the state.

Aquaculture produce is widely distributed around the state, interstate and overseas but the MWFM agents and provedores rank amongst the major distributors for this too, especially for mussels and rainbow trout.

The combined throughput of the three market agents for the 2004/5 year was approximately 12,000 tonnes of product from Victorian state waters, adjacent Commonwealth fisheries as well as some landings from NSW, South Australia and further a field. The 12 provedore businesses also sell interstate product as well as Victorian landings, but details of their sales are not available.

Victoria relies on its aquaculture and its estuarine, coastal and South East Trawl fishery for its “local” supply; inland supply now is negligible. This is augmented with interstate supplies and imports to meet demand. The sales volume of “Victorian fish” to Melbourne consumers is not easily assessed because of the high level of two way arbitrage trade between the Melbourne and Sydney markets and other capitals.

With three agents and 12 provedores at the MWFM Victorian fishers and farmers have a wide variety of buyers on one site —more than that available at the Sydney Fish Market where there is just one auction company and nine wholesale buyers.

Victorian agents, provedores and wholesalers operate in a competitive open marketplace and their market power and profit margins are constrained by competitive pressures from similar businesses; monopolistic or oligopolistic situations are rare and short lived. This is particularly so with trawl fish and aquaculture produce because many fishers or farmers are supplying a number of wholesalers as well as the MWFM agents with identical undifferentiated products: usually loose unbranded whole fish or shellfish such as mussels.

Many persons, throughout the supply chain from fishers/farmers to retailers reported that profit margins had been declining for some years and were at a dangerously low level for some; this was borne out by the data gathered in the retailer surveys.

The Melbourne yellow pages phone book for 2004 listed 135 Fish & Seafoods-Retail entities: mostly fishmongers selling fresh fish and seafood (but not hot cooked fish and chips); this was down from some 200 in 1991. Almost all of these businesses buy a large part of their supply from the auction and/or provedores at the MWFM according to the trade interviews.

Some fish and chips stores buy from the MWFM provedores but the majority of trade is accounted for by general wholesalers or frozen food distributors. The thousands of restaurants in Melbourne also source

their supplies from seafood wholesalers, general wholesalers and frozen food distributors as well as the local retail fishmonger.

The distribution of fresh and frozen Australian fish and seafood from producer to consumer, whether it is sea caught or farmed, mostly follows the same pathway through a few market intermediaries before reaching Melbourne consumers, as shown in the figures on the following pages.

Figure 4.4.1 shows a generalized supply chain for fresh Victorian fish and seafood. The supply chain can however be very short (Producer-Consumer) or long because producers may use multiple, sometimes competing supply chains, as seen in the more detailed Figure 4.4.2 which also shows the competition and complexity added by imported fresh product from New Zealand such as snapper, ling, blue eye etc.

There is little vertical integration in the Victorian industry although there are a few exceptions in both fishing and aquaculture with a couple of companies having diverse interests covering commercial fishing, processing, aquaculture, or wholesale and export trade. McLaughlin Consolidated Fishermen Ltd is the outstanding Victorian example of a vertically integrated enterprise operating from the catching sector at Lakes Entrance through to the wholesale trade in Melbourne and beyond.

Horizontal integration or alliances are more common, particularly in the fishing and retail sector where multi-fishing licence holders and retail chains/franchises respectively are not unusual, particularly in the fish and chips business where there are as many as nine stores operating under one brand name. Also there is also an informal alliance of mussel farmers in Victoria working together to improving marketing of mussels.

A common element across all sectors is that small and medium enterprises, usually family companies, predominate; there are no Victorian public companies directly operating in the seafood industry. Large public companies such as Woolworths and Coles-Myer however are involved in seafood distribution via their supermarket outlets across the State.

Figure 4.4.1. A typical supply chain from fresh fish producers (eg wild snapper or farmed trout) to the Melbourne consumer.

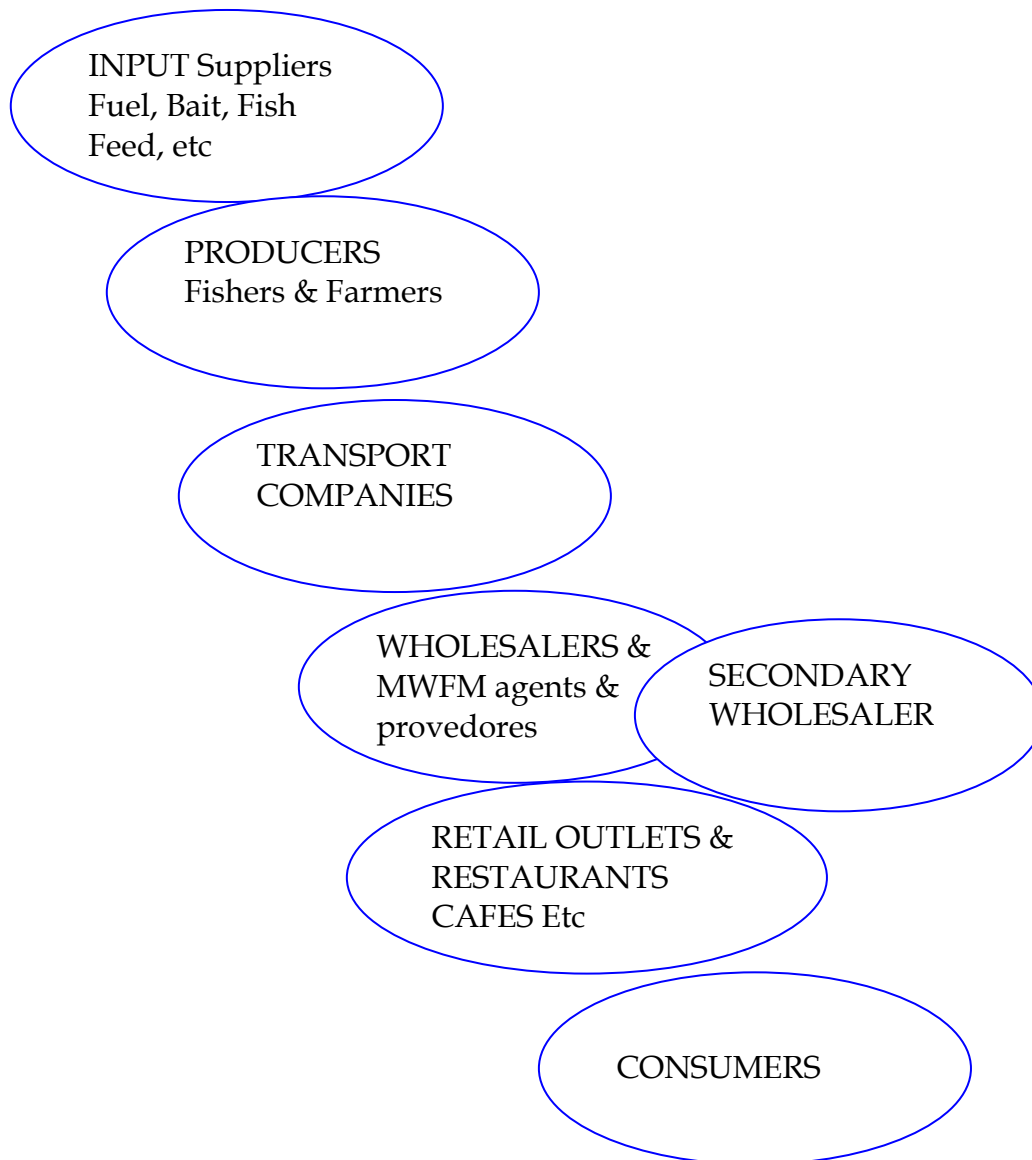
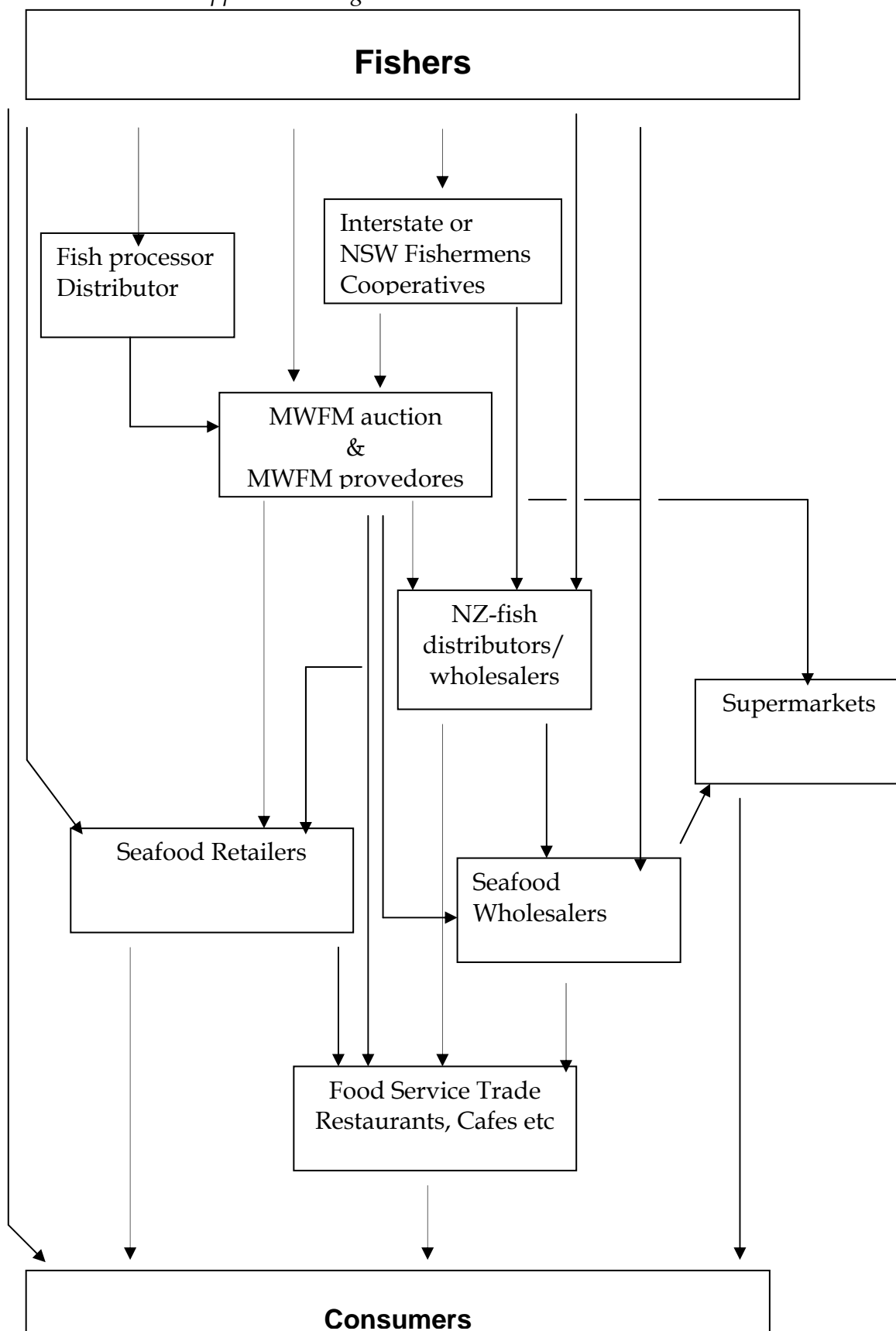
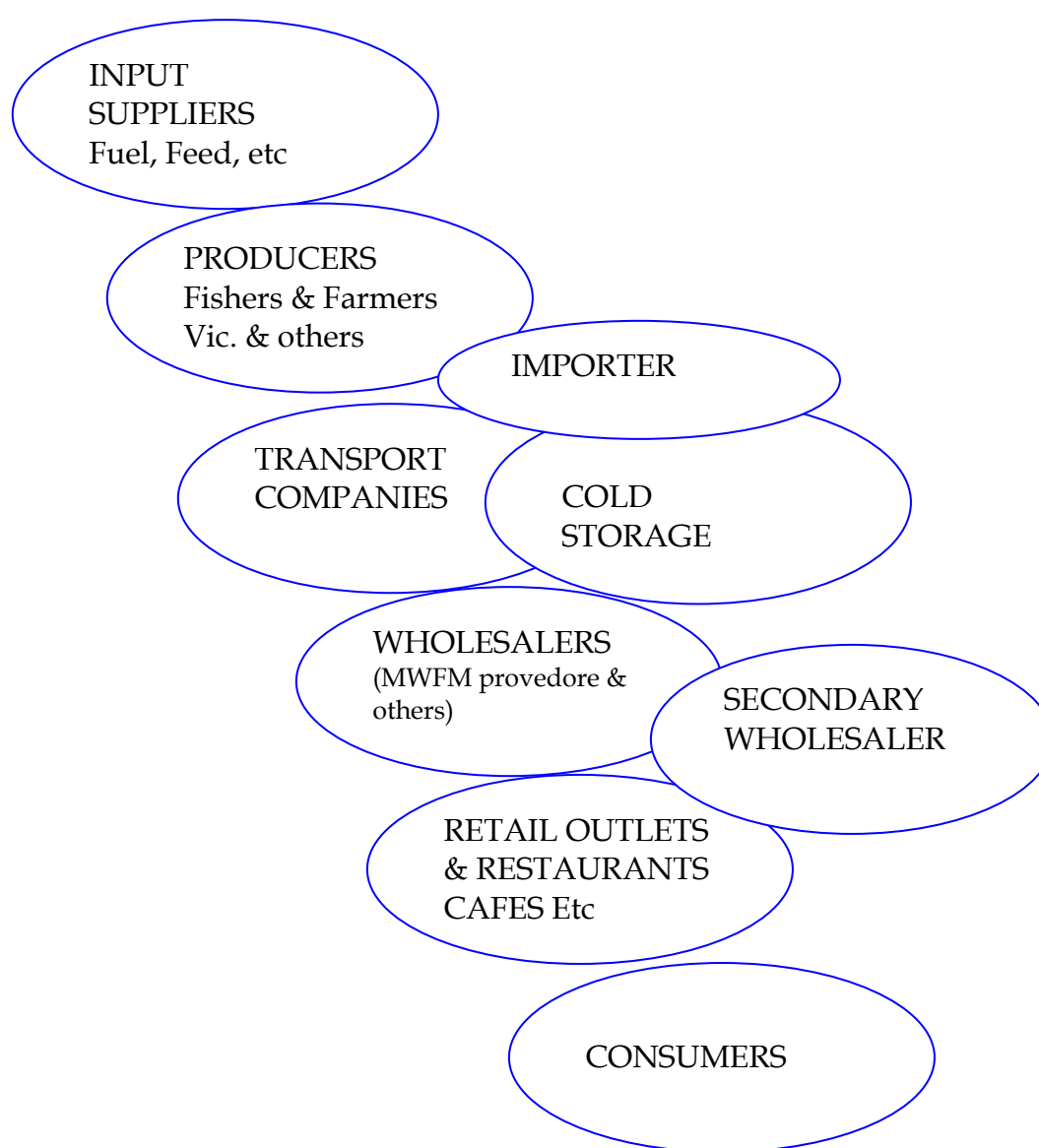


Figure 4.4.2. Fresh wild snapper marketing channels.

The frozen fish and seafood supply chain commonly differs from that for fresh product in that it has one or more cold storage companies and at least one refrigerated transport company participating in the product flow from producer to consumer (Figure 4.4.3 below). In addition much of the frozen product in the trade is from overseas, imported by a specialist importing company or a seafood wholesaling company.

In many cases the farmer or fisher is often the processor too (processing and freezing on site/on board). Secondary or multiple wholesalers are not unusual with frozen foods, with the primary wholesaler/importer typically in the MWFM and the secondary wholesaler elsewhere.

Figure 4.4.3. A typical supply chain between frozen seafood producers and the consumers.



4.4.2 Victorian Supply Chain Management

The fish/seafood supply chains in Victoria are predominantly informal and weakly integrated, having grown from traditional arms length business practices where documented contractual arrangements or specifications are the exception rather than the rule and short-term price driven deals or transactional relationships are commonplace.

The typical Victorian supply chain for both aquaculture products and wild catch, like those elsewhere in Australia, is probably best described as a production driven distribution chain rather than a consumer oriented linkage of like minded chain partners willingly sharing pricing and other information.

The Australian seafood industry has often been described as fragmented and Victoria's is no different, but nearing the end of this study it was probably worse than most states because the peak aquaculture industry body Victorian Aquaculture Council had ceased operation. The collapse of a peak industry body would be cause for concern in any state but it seems more serious in Victoria because the low level of support and optimism for aquaculture produce from fishmongers noted earlier (Section 4.2.17) is a supply chain impediment that need to be addressed by industry and government.

The Australian seafood industry's supply chains however seem no different to those in agribusiness according to the commentary on the AFFA Industry Development Supply Chain web site:

“Australia has not yet embraced supply chain management to the extent that other countries have. Many farmers still view themselves as commodity producers only, rather than as links in supply chains. This occurs right through to the consumer. Each link of the chain is viewed separately, and the relationship between buyer and seller is still mostly adversarial”.

Most persons interviewed for this study, outside of the supermarket sector, were not familiar with the term *supply chain management*, nor the benefits offered by efficient SCM, although many were operating in an effective informal supply chain where the participants had intuitively recognised that there were benefits to be had in working together to supply consumers with fish, even though consumer interests were rarely paramount.

The attendance of about 20 industry participants at the Seafood Supply Chain Innovation workshop on traceability held by Seafood Services Australia in Geelong in late February this year demonstrates a moderate level of interest in supply chain management but it is too early yet to assess the impact of this initiative.

The most formal seafood trading arrangements were those used by the national supermarket chains such as Coles/BiLo and Woolworths where they forward-order container loads of imported products such as farmed prawns, fillets etc; these national companies also demonstrate the greatest interest in improving supply chain logistics (Section 4.4.2.4).

Another noteworthy point about the seafood supply chains is that many of the input suppliers to fishers and farmers such as fuel, finance, cold storage and transport companies are not thought of as valued partners in the supply chain but rather as another cost to their business.

Sentiments commonly expressed by various parties in the chain were a need to “*do it yourself*”, “*make more by going direct*” and to “*eliminate the middleman*” to save on costs. By contrast most of the input companies in the aquaculture supply chain and the transport companies strongly identify themselves as part of the aquaculture or seafood industry.

More detailed observations on Victorian SCM are recorded below in terms of six key SCM principles.

4.4.2.1 Focus on Customers And Consumers

Newer or younger operatives in Victoria have researched the needs of their customers and even the consumers in some instances and so have a strong customer and consumer focus. This is seen across the industry from fisher and farmer to the retail fishmonger or food outlet where the younger generation takes over the business, changes the business culture overnight and seeks new opportunities. The introduction of fresh fish into several food store groups' (eg Foodworks) by a young provedore-wholesaler is an outcome of a recent generational change.

The majority of businesses however are still producers and sellers of species or products which they have traditionally been working with and are not up to date with customer needs and modern consumer behaviour or the latest food preferences. As indicated earlier they are mostly focussed on their own business and interests rather than meeting customers needs.

The run down condition of many fish and chips shops and take away outlets and the widespread misnaming and mislabelling of product as fresh when it is in fact thawed out frozen fish is testimony to the indifference of these operators to meeting consumer's wishes for an attractive store with helpful personnel.

It should be noted however that some of these fish and chips operators have only been in the fish business and /or Australia for a short time and are totally unaware of what consumers want and often just have the labels left behind by their predecessor and/or use the marketing names recommended by their fish supplier.

4.4.2.2. Creating and sharing value

Few operators understood how value is added from the fisher/farmer through to the retail or restaurant door let alone understand the costs and profit or loss incurred by the partners in the distribution chain to the consumer.

Fishers often comment on the low price of orange roughy at the auction market and the high price of orange roughy fillet in the retailers display just like fish farmers contrast a restaurant menu price for their produce to the farm gate price they receive from a buyer. At the same time wholesalers, retailers and restaurateurs are counting the losses from unsold product that had to be dumped because demand did not meet their expectations.

One of the common difficulties reported by interviewees was the short term thinking that is commonly seen in the industry today. Wholesale distributors lamented that farmers wanting to sell “new” species were expecting unrealistic high prices and did not appreciate that perhaps market entry with an introductory (low) price was a better strategy for long term market success.

The widespread shortage of aquaculture champions in the Melbourne fish and seafood retail trade was mirrored in the wholesale sector and represents a real impediment to the sale of aquaculture produce in the State.

Many fishmongers and fish and chips operators have only a rudimentary understanding of aquaculture and commercial fishing in Australia or consumer requirements and are in no position to understand how to add value or help promote Australian seafood sales; some have great difficulty communicating with their customers at all.

Nevertheless there are signs that young farmers and fishers are now working closely with their customers to learn more about each others needs and how they can collaborate to add value to the fish while still respecting the consumers interests ie working to make the “fish pie” larger and tastier rather than competing with others of their kind for a share of the same old “pie” with price cutting.

4.4.2.3 Getting the Product Right

Victorian fish and seafood is mostly of very high quality because of well established handling and distribution practices and the short distances and time involved in getting it to consumers.

Nevertheless several fishers, wholesalers and retailers reported that there was a need for continuing education in the industry to ensure that fish is well handled at all times by everyone so that the shelf life and economic value are maximised, especially given Victoria’s limited fisheries resources and fishing restrictions. The bay and inlet fisheries were singled out for mention.

As noted earlier some seafood is not true to label regarding fresh or frozen/thawed status and hence does not meet consumer expectation even if it is safe to eat.

The recent introduction of food safety plans and new regulations from Prime Safe legislation in Victoria have added to the food safety net for Victorian consumers even though they have come at a very high financial cost for many small businesses and severely damaged government-industry relations in some sectors, especially yabby farming.

The Prime Safe legislation which covers fishmongers but leaves licensing control of the fish and chips outlet and the supermarket fish business to the local council has only added to the fragmented nature of the seafood industry and undermines the concept of whole of chain approach to seafood safety.

Interestingly, the recently released *Victoria's Fisheries and Aquaculture Research and Development Strategy 2005-2010* (FCC 2005) has as one of its R & D objectives :

“ Improve the costs of production (efficiency) and value per unit (effectiveness) of wild fisheries and aquaculture through a “whole of chain” approach”.

Victorian fishers and farmers have been successful in getting high quality seafoods out to customers across the state, interstate and even overseas with some products such as abalone, lobster and rainbow trout. Victoria has also has earned a high reputation for the seafood extender and other surimi products which have made inroads in domestic and overseas markets.

Retailers were also very complimentary about the new product lines from the Victorian rainbow trout industry. So overall it seems that Victorian producers and their partners have got the product right most of the time.

4.4.2.4 Ensuring Effective Logistics And Distribution

The Victorian fishing and aquaculture operators, wholesale fish merchants and retailers were mostly very pleased with the logistics, road transport and distribution facilities within the state and those available for interstate trade. The two significant problems reported across the industry were the shortage of cold storage facilities at the MWFM and the high cost of air freight since the demise of Ansett airlines coupled with the weakened service offered by remaining air freight services.

Despite the limited space and increased fish supply over the years the MWFM has operated effectively in the sale of large volumes of fish each day and only received two unfavourable comments (regarding product handling and quality) from more than 130 persons interviewed in this study.

The major national supermarket chains are investing heavily in supply chain innovation focusing on reducing the costs and time involved in warehouse/cold storage and distribution to individual stores. The seafood industry in Victoria, as in other states, has responded to increasing demands from supermarket customers but mostly still relies on rather unsophisticated invoicing, labelling and traceability systems.

One major supermarket fish buyer opined that his fish suppliers were relying on him for supply chain improvements and were not as innovative or proactive as the fruit and produce merchants who have already embraced modern bar coding and other electronic aids such as RFID (Radio Frequency Identification Devices). This comment was made before the workshop on Traceability in Geelong in February this year but it is noteworthy that the Gippsland Aquaculture Industry Network is working on a new system of farm-to-plate traceability with international supply chain company EAN Australia.

Exclusive distribution arrangements are not common in seafood marketing in Australia but a growth in preferred supplier arrangements and tendering for the seafood supply to major hotel or restaurant groups in Melbourne was reported. The national supermarket chains have long had a preferred supplier arrangement with seafood importers and wholesalers.

Another noteworthy matter was a suggestion from several wholesalers and retailers for better order and delivery fulfilment from aquaculture operators who frequently schedule harvest and packing days to meet their needs rather than market needs or otherwise fail to meet agreements. A common concern was the

(long) lead time required on orders with some companies which acted as an impediment to market growth.

4.4.2.5 Having An Information And Communication Strategy

The information and communications flow across the fishing and aquaculture sector and through the wholesale, processing and retail businesses across the state is infrequent and usually very limited in coverage. Many retail outlets reported difficult trading conditions and frequent queries from customers while the media ran stories about the risk to public health from the high mercury content of some fish, and thought there was no spokesman or response from the seafood industry to counter this problem.

This erroneous perception developed because most operators were not aware of the efforts by the Australian Seafood Industry Council, the FRDC, SSA and Seafood Industry Victoria (SIV, the peak industry body in Victoria) to counter this information. SIV operates with very limited funds and a skeleton staff and basically attends only to the needs of the State's fishers who provide the funds which keep it in existence.

The now defunct Victorian Aquaculture Council also worked with limited funds, from aquaculturists, did not have any paid staff at all and basically attended to the needs of its constituents only. The Victorian Fish and Food Marketers Association is another industry organization without any paid staff that served its constituents, the frozen fish distributors and wholesalers.

Seafood retailers do not have any association and have not had any direct representation or communication channel since the demise of the Victorian Seafood merchants Association some 20 years ago. The Victorian aquaculture supply chain therefore has no representative voice at either the producer or retailer end. Since May 2004 wholesale and retail fishmongers who attend the MWFM daily have been able to get a copy of Seafood News a free four page monthly newsletter distributed personally by its publisher at the MWFM, but this is a case of "too little too late".

The lack of a well funded industry wide body means that there has not been a strong single voice or communication centre for the Victorian seafood industry or a body serving the needs of all sectors.

The retail fishmongers and fish and chips operators are with just few exceptions not receiving nor accessing any information from state or commonwealth agencies, FRDC or Seafood Services Australia and are mostly totally unaware of the Research & Development work going on in the industry for their benefit and the vast array of information that is published in print or on various industry web sites.

While many wholesalers and processors subscribe to the national magazine Seafood Australia only two of 120 retail businesses interviewed were subscribers and only three were aware of the FRDC (2002) booklet *Retail sale and consumption of seafood*.

As indicated earlier there are many inexperienced fish and chips operators and a few fishmongers in great need of information to help them operate profitably and meet the basic requirements of their customers. It appears that they are in effect totally disconnected from their customers and the industry that provides the goods they sell.

The supermarket chains' fish section manager typically are not receiving nor accessing seafood industry resource material but the chains regularly communicate with customers via their information-recipe cards and weekend catalogues with fish specials; these regular promotions mean that the supermarket sector is in regular direct communication with its suppliers. The Victorian fishers and farmers and individual

fishmongers however have only been issuing promotional material on an irregular and infrequent basis and communication flow with their customers is more *ad hoc* than regular.

4.4.2.6 Building Effective Relationships

The Victorian seafood industry like that elsewhere in Australia is characterised by fishers selling fish to the highest bidder while their customers, the wholesalers and retailers, negotiate with them for the best price each day.

This price focussed transactional relationship does not engender the development of very effective trusting long term relationships. Some of the highly competitive, sometimes even adversarial nature of the Australian seafood industry can be deduced from the numerous and competitive/conflicting channels used to supply consumers with fresh fish and fresh farmed prawns, as seen in the graphical representation in Figure 4.4.2 for wild snapper.

Profit margins and profitability are so small for many parties in the supply chain that they are focussed on operating issues and short time survival rather than thinking about the long term or strategic issues. An outcome is that the long standing aggressive business model of price competition and maximising individual profitability has become the common one and so there is often little trust between the parties even if they “do business” together on a regular basis.

While SCM in the Victorian seafood industry is mostly on a par with that elsewhere in Australia the interaction fishmongers and fish and chips outlets have with their customers and with the businesses up the supply chain appears much weaker than that elsewhere and deserves attention because of its broad implications.

5. General Discussion

5.1 Changes In Consumption

The key findings of the retailer surveys, the consumer focus group discussions and the consumer surveys, and their implications, are described in this section while recommendations arising from the overall findings are presented in the following chapter.

This study has found some notable changes in seafood purchasing and eating patterns by Melbourne households since the 1991 NSCS but many of the consumer perceptions and attitudes regarding fish and the seafood industry have apparently remained largely unchanged.

Almost all Melbournians enjoy eating fish and seafood, 97 percent of respondents reported that they had eaten fish or seafood in the past year; this figure is similar to the Bureau of Rural Sciences (BRS 2003) national study finding that 95% of Australians eat seafood.

Per capita fish consumption in Melbourne has risen to 12.5kg per annum, a rise of 8.3% from the 11.5 kg of 1991; in home consumption rose just 2.3% to 7.8kg while out of home consumption rose 19.6% to 4.7kg per person. The rise in fish and seafood consumption over the 14 years is better than the decline experienced by the beef industry but not as great as the 27% rise in chicken consumption over the ten years to 2004 (RIRDC 2004).

Fish was widely seen as healthy flavoursome food but not regarded as an everyday meal for the Melbourne family, rather it was most strongly associated with an entertaining entrée, and regarded as too dear to be eaten more often.

The taste, health attributes and variety of seafood continue to be the main sales drivers but the consumers' lack of confidence in buying and preparing fish and seafood, and high price, were the key factors constraining in home consumption and the former also contributing to the out of home growth in consumption.

The Melbourne per capita consumption appears to be lower than that of Sydney or Perth. Sydney's per capita consumption was estimated at 15.1 kg in 1999 while Perth's was 14.7kg; both of these cities experienced stronger growth by 1999 in out of home consumption than Melbourne has to date (37% and 19% respectively) but Perth's in home consumption fell by 27% between 1991 and 1999 while Sydney's rose 8.4% (FRDC 2002).

The 40-59 years age group or "baby boomers" had the greatest combined in and out of home consumption while the lowest consumption volume was found in the 15 to 19 years old. This is related to income differences but it is also a reflection of the baby boomers desire for the health benefits of eating fish while the young see little or no benefits in it at their age despite knowing "it's good for you". Nonetheless fried fish remains far more popular than the total of the healthier fish meals such as grilled and steamed fish.

Canned fish, especially tuna, has continued to increase in popularity and now accounts for more than a third of individual purchases, again a finding similar to the national figures reported by the BRS. Product

and packaging innovations offering greater convenience, quality and value have been responsible for the increasing consumption of canned fish noted in Melbourne, Sydney and Perth since the NSCS.

Farmed salmon has gone from zero to hero status with retailers and consumers alike and flake (shark) remains Melbourne's favourite fillet for fish and chips.

The trend away from whole fish to fillets continues and highlights the growing importance of farming the larger fish species to help meet the increasing demand for inexpensive boneless fish fillets.

There have also been marked changes in the out of home fish/seafood consumption too. The incidence of eating fish/seafood at a friend's or relative's home has declined and restaurants now only account for 29% of the Melbourne out of home seafood meals compared to 39% in 1991.

This trend to more frequent eating out at mid price eateries such as cafés, smart fish and chips outlets and the inexpensive restaurants coupled with a decline in seafood consumption for the restaurant category of locations as well as at a friend's place, was noted in the 1999 Sydney and Perth studies too and points to a national move to more frequent seafood eating out of home but in a more casual and cheaper manner. The shift to cheaper eating out has implications for aquaculture as well as fisheries in that it too favours the farming of the larger cheaper species.

The common message from the study's findings from in home and out of home consumption, and retail sales, is that consumers are looking for convenience, quality and value in fish and seafood and want quick and easy meals in and out of home.

The changes in out of home and in in-home consumption and prevailing consumer attitudes suggest that the seafood industry would be better served if it recognises fish/seafood more as an item of discretionary spending rather than a staple food item as it has done in the past.

5.2 Retail Sales Level and Market Share

All retail outlet categories experienced marked increases in sales figures since 1991 but the supermarket-food store category recorded the most impressive changes with average weekly sales jumping almost 400% to about \$3000 per week, albeit from a low base. The fishmonger category of outlet only increased its average sales figure 120% to almost \$20,000 while the fish and chips-take away category recorded a rise of 280% to \$4300 per week (including a nominal 10% contribution from the introduction of the GST Goods and Service Tax). Much of the fishmongers sales increase was due to inflation in fish prices rather than increased volume per outlet.

Furthermore, those average rises in weekly sales value were recorded while the number of fishmonger outlets fell by a third and the number of supermarket-food store category increased. The total sales value of the “fresh” category (which includes frozen fillets) across all three outlets was estimated at \$272 million per annum from the 2004/2005 consumer surveys.

According to the consumer surveys, the supermarket sector’s share of the fresh trade had doubled from 16% to 32 % by volume since 1991 while the fishmonger sector’s share had fallen from 65% to 51% and the fish and chips sector’s share of sales for in home consumption shrank from 4% to negligible levels.

The supermarket sector is winning in the fish/seafood category just as it has done with produce and meat. It has been in the forefront with SCM and in its adoption of new farmed species as well as the modified atmosphere consumer packs of farmed salmon while the specialist fish outlets have predominantly stuck with the tried and proven “wet fish” and whose innovation has largely been limited to areas with strong Asian demand where imported fish such as milkfish, tilapia, snakehead and pomfret are now common sights.

None of these new packaged products or wet fish have yet made it to the lists of main sellers although basa has done so in the supermarket and fish and chips sector.

Overall the supermarket sector’s success is a reflection of its many efforts to improve its offering with dedicated fish department or fish counters in many stores across Melbourne with modern fitouts. It has followed the shrinking household and life style changes and responded best to the demand for quicker easier meals solutions for the increasing number of “time poor” shoppers — some fishmongers and many fish and chips outlets in Melbourne are only open five or six days per week.

By contrast many fish and chips and take aways and several of the fishmonger category of outlets were rundown businesses, typically operated by new inexperienced couples or older people near retirement, with premises in need of refurbishment and recording poor sales figures while at the same time several of the country’s more attractive fishmonger and fish and chips outlets operate in Melbourne.

While retailers acknowledged that a clean outlet or store was an important issue for consumers in selecting a place to shop some apparently did not appreciate that *their* store was uninviting and in need of renovation even if it did meet food safety standards.

Two characteristics were evident in thriving businesses, regardless of store category, geographical location or demographic segment:

Inviting fish counters or outlets

Personnel who could engage with customers and help any wanting assistance.

Similar findings on a sales shift from the traditional specialist fish outlets to the supermarket sector, and on the critical success factors, were noted in the Sydney study in 1999.

The progress of the supermarket category is interesting in the face of the perception of some consumers and members of the seafood industry that supermarkets are “not the place” for fresh fish but this progress may also be related to the suggestion from others that there is a limited number of good fishmonger outlets in some areas which is constraining fish consumption. Pertinent to this, there were at least a couple of large shopping centres in Melbourne with no fishmonger whatsoever.

Ironically, producers are ready to “name and shame” supermarket operators and others who fail to identify imported seafood as such but they ignore the mislabelling of Australian seafood as fresh when it is clearly thawed out seafood, sometimes their own. Ironical too, it is the supermarket sector that has been most active advertising and promoting seafood in Victoria in recent years and it is the supermarket sector that is sometimes ridiculed by consumers when it advises that the seafood has been “thawed for your convenience”.

It is widely recognised that shoppers make 70% of decisions in store at point of sale and while a reputation for high quality fish and seafood was identified as a desirable characteristic when choosing an outlet to purchase seafood it appears that consumers increasingly respond to visibly good quality fish and/or attractive price specials when they notice these in the supermarket fish section.

A noteworthy development in Melbourne was the increasing interest in fresh fish from the food store groups and the smaller supermarket groups that were also opening up new fish departments within their stores. Interestingly too Victorian butchers have shown increasing interest in selling fresh fish and are open on Mondays when some specialist fish outlets are closed.

Melbourne today has a full range of seafood business models in the supermarket-food store category ranging from the self serve mini fresh fish range offered by the Aldi supermarket group, to the mid size range in the deli counters of some of the IGA stores and the diverse fresh and frozen range in the full service fish departments of the largest Woolworths and Coles supermarkets. Enterprising fishmongers have modernised their stores but there has been no real innovation in business models in this sector.

Fishmongers however shared the same mix of optimism and uncertainty about business over the next five years as supermarket operators did but they were not as optimistic about the sales prospects for selected aquaculture species and underutilised wild species. All retailer categories however felt that future sales levels were pretty much dependent on the price of fish.

With their current focus on supply chain improvements, better staff training and open door to new aquaculture produce and packaged seafood the supermarket chains and the food stores groups are likely to continue growing average sales figures as well as their overall market share.

Several multiple store operators/franchisers in the fishmonger and fish and chips sector have increased the number of their outlets in the past few years but nevertheless the owner-operator dominated fishmonger and fish and chips sector is more likely to continue with hard times and a declining market share unless more owner-operators recognise the need to be innovative and modernise their facilities to provide more attractive and enjoyable shopping experiences in line with those offered by other food stores and businesses wanting the consumers’ discretionary dollar.

5.3 Strengthening The Supply Chain

The supply chains in Victoria are mostly informal, weakly integrated and with little collaboration and few partnership relationships. While this is typical of the Australian seafood industry, and indeed agribusiness too, there is ample room for improvement.

The operational efficiency of the MWFM with its three agents and 12 provedores is both a strength and a weakness for the Victorian seafood industry. The speed with which the morning's business is transacted is appreciated by all parties as it allows for the fish to be in the retailers premises at an early hour.

But this speed has hidden costs because the retail fishmongers are so busy moving from one agent or provedore to another to get the best deal they spend little or no time talking to their colleagues and exchanging ideas or views about the supply chain that supplies them or about the consumers that sustain their businesses. This haste also means that few spend sufficient time chatting with their suppliers or colleagues to get much of an understanding of the supply chain operation.

As indicated earlier most industry members were not familiar with the term supply chain management when consulted but there is growing interest in it and there have been developments in supply chain management in recent months with some aquaculturists working together on better marketing and traceability for their products.

Traceability is now recognised as an increasingly important issue by Victorian fishers, fish farmers and the supermarket sector as requiring attention.

The weak interaction or complete disconnection that fishmongers and the fish and chips outlets have with their customers and with the businesses up the supply chain has however largely gone unnoticed but is in need of industry and government attention.

Government fisheries agencies at state and commonwealth level have traditionally supported the primary producers by way of industry development, training or marketing initiatives with financial grants and the employment of development or extension officers in order to facilitate industry development.

Yet the retail sector, the industry's shop front or front line, has not attracted government assistance, other than Western Australia's Seafood Quality Management Initiative, and remains the weakest link in the supply chain because being closest to the consumer it can substantially help or hinder any producer or government initiative.

The communication flow up and down the Victorian seafood supply chains and between government agencies and the retail sector all need strengthening if the seafood industry is to perform profitably and meet consumer expectations.

Engaging with independent retail operators *may not be easy but it has become increasingly necessary* and a Victorian government agency needs to take a leadership role, as explained in the following section.

5.4 Engaging And Upskilling The Retail Sector

Most fish and seafood retailers are in need of:

- Information on Australian fish resources, fishing and aquaculture
- More product knowledge, especially how to value add in house
- Succinct reliable information on seafood safety and labelling requirements
- More marketing skills and knowledge particularly an understanding of consumer concerns regarding fish retailing and resource allocation
- Timely news on issues affecting the Victorian seafood supply chains
- Business benchmarking information and business review assistance

The typical fishmonger and fish and chips operator is invariably a busy person, many have little formal education or literacy skills and very few are aware of let alone availed themselves of the information published by the FRDC, Seafood Services Australia etc that would commonly be regarded as easily accessible.

Victorian government assistance is required to improve the retailers' business because it would deliver economic benefits to fish producers, others in the supply chain, the state's economy as well as enhance consumer satisfaction with fish/seafood; increased consumption of fish/seafood also offers health benefits to the nation. Without government leadership and active participation, change is unlikely.

For Victorian fishers and farmers especially it might be summed up as :

*Your future is in their hands
Lend them a helping hand*

In the absence of a seafood retailer's association and given Seafood Industry Victoria's status as the "senior" industry body recognised by the Victorian Department of Primary Industries (VDPI) it needs to take the initiative and seek financial assistance from the Victorian government to progress the Seafood Industry Strategy produced earlier this year.

VDPI is best qualified to hold a "Seafood Business Summit", with SIV, to get the entire supply chain together to implement the Seafood Industry Strategy: a detailed action plan with timelines and budgets — a Victorian Seafood Business Action Plan — is needed. VDPI has the human resources to do so having undertaken such tasks in other food sectors.

A retailer upskilling program should have high priority in any such plan and the demise of the Victorian Aquaculture Council indicates that there is a need for the VDPI Aquaculture section to play a central role too given the importance of aquaculture in "filling the gap" in seafood supply and demand.

There is a precedent: VDPI's predecessor the Department of Agriculture And Rural Affairs, through its Fish Marketing Unit, started working with the retail sector in the late 1980s to improve fish handling, quality and labelling, but the unit was later disbanded when various departments were reformed.

The engagement of specialist extension or development officers, by the government sector in partnership with SIV and other industry groups, to undertake half day "business skills development" workshops or seminars as well as case study management and mentoring would be a cost effective way of quickly facilitating the desired outcomes. These extension officers could offer business benchmarking

information and advice on management issues or perhaps suggest total renovation of the business premises.

Any workshops or other assistance would have to be especially tailored to attract the owner operators — the most common operators and key people — and most in need of support. Traditional competency based training for formal qualifications would not be effective in achieving the necessary rapid engagement and change. That form of training is best directed at employees and owner managers with the time and financial resources to do so; owners are more likely to be attracted by offering the prospect of improving their economic performance via seminars or workshops rather than the more intimidating idea of formal training.

A better informed retail sector would be able to assist consumers and help the producers promote Australian aquaculture produce which may ease the demand for already heavily fished and pricey familiar wild species such as flathead, orange roughy and shark and many of the State's other favourite fish and seafood.

A better skilled and fully involved retail sector — supermarkets, fishmongers and fish and chips — can vastly improve the outcomes of any industry initiatives.

If the retail sector remains unassisted by government and industry and left to itself much of the good work done by farmers and fishers to improve their fish quality or marketing practices is lost or even undone.

The development of retailer upskilling programs would be of great value to other states too so assistance could be sought from national bodies such as AFFA, FRDC, SSA and NAC. The development of a Seafood Retailers Handbook, a small book focussing on the retail handling and sale of seafood, to complement the Australian Seafood Users Manual, warrants consideration.

5.5 Attitudes On Aquaculture and Resource Allocation

The vast majority of Melbourne consumers are concerned about pollution, food contamination and food safety, especially after recent publicity about high mercury levels in some wild fish and the safety of imported farmed prawns: 11 per cent *strongly* agreed with the statement that adverse media publicity about fish and seafood contaminants had led to a reduction in their fish/seafood consumption, but by far the majority are not concerned whether their fish comes from wild stocks or aquaculture.

A significant decline in fish/seafood sales was noted by Melbourne retailers for about a month or so after each media episode on mercury in fish or chemicals in seafood. There were similar findings on consumer attitudes on seafood contaminants, food safety and the wild/farmed provenance of seafood in Sydney and Perth in 1999.

It was evident from focus group discussion that most Melbourne consumers have little knowledge of how Australian commercial fishing and aquaculture are regulated by various government agencies and the seafood industry's initiatives with various Codes of Practice, Environmental Management Systems and by-catch reduction programs.

The majority of Melbourne households rely on fish supply from commercial fishing and aquaculture as 85% of household reported no one fishing in the three months preceding the survey. Furthermore almost 40% of consumers surveyed would like to see more fresh local seafood available to buy rather than see less local seafood available, to allow for an increase in recreational fishing; 7% would prefer more fish made available for recreational fishing and slightly more than 40% felt that it was about right as it is now.

In Perth in 1999 there was far more support (76%) for greater resource allocation to commercial fishing with 7% favouring greater allocation to recreational fishing and 6% content with the existing status. There is clearly substantial latent community support across the country for the fishing sector that warrants nurturing and harnessing to add strength to the fishers' voice in the public debate over resource allocation.

With regard to fish provenance, consumers identified a number of positive and negative characteristics for both wild fisheries and aquaculture: Aquaculture was seen as the way of the future because it was more sustainable while oceans were commonly perceived as heavily or overfished, but concerns were raised about animal welfare and the use of chemicals in aquaculture. These findings are similar to those of the Bureau of Rural Science's (2003) national study on community perceptions on fishing.

Fish from the wild fishery was seen as natural but there were concerns about sustainability of commercial fishing especially for shark, orange roughy and tuna.

Consumers did not compare the taste of aquaculture produce to that of the wild fish in focus groups discussion although they were able to comment on what they disliked with particular species when asked to do so in the consumer surveys.

The taste of aquaculture fish was evidently less of a concern with consumers than it was with fishmongers. Trade and consumer attitudes on particular species and the outlook for selected species are discussed in the following section.

5.6 Outlook For Aquaculture

And Underutilised Wild Species

The market prospects for many of the well known Australian aquaculture products such as prawns and barramundi are attractive because they have a very high likeability but are yet to be tried by many Melbourne consumers. Rainbow trout and mussels, are of particular interest because they are grown in Victoria, commonly liked and yet to be tried by some 30% of the population.

Mussels are an exceptional seafood because they are inexpensive, “low calorie”, well known, well liked by trade and consumer alike, and capable of increased production, locally. Rainbow trout shares many of these characteristics but not as strongly.

Mussels represent Victorian aquaculture’s great prospect for increased domestic sales but it is a sector without a single representative body to facilitate market development. Given the strong expansion in mussel farming in other states too the establishment of a national mussel producers association to facilitate market development warrants consideration.

Farmed prawns arguably have the best prospects for rapid increases in sales volumes because they were yet to be tried by some 40% of the Melbourne population and were liked by 90% of those who had tried them.

Prawns enjoy an enviable reputation amongst Australian consumers and Melbourne is no exception but Melbourne has not attracted the promotional effort from farmers or fishing companies that Sydney has received and so farmed prawns had not made the main sellers of any retail outlet whilst they were amongst the main sellers in Sydney stores by 1999. It appears that the lure of larger markets in Sydney or overseas has generated a “Madrid before Melbourne” mentality amongst many prawn farming companies.

Supermarket operators were the most optimistic about albacore, pilchards and the aquaculture species, and fishmongers were more optimistic than fish and chips operators who had little or no interest as they did not see themselves selling more fresh fish. Yet retailers were largely unaware that consumers are more pleased with aquaculture produce than they are : more than 70% of consumers indicated they are not concerned whether their fish comes from commercial fishing or aquaculture.

The supermarket sector was pleased with the sales performance and profitability of farmed Atlantic salmon, and to a lesser degree farmed barramundi, and valued the more reliable supply and consistent quality offered by aquaculture produce which in turn allow for scheduled promotion programs.

Albacore has potential for market expansion as a raw fish and for value adding because it is an inexpensive large species with almost white flesh which can easily be rendered boneless and highly desirable. Pilchards have gained some recognition as a result of their relatively low price and promotion as a butterfly fillet by a Western Australian processor and Victorian industry revenue can be increased quickly with a shift of effort from catching bait fish or fish for animal feed to table fish, with improved handling.

All categories of retailers highlighted the need for the aquaculture and fishing operators to provide trade support with in store tastings and the distribution of consumer information and recipe leaflets to promote sales. This was deemed imperative to generate demand for new species.

The outstanding market success of Atlantic salmon in Australia over the past decade has widely been attributed to the Tasmanian salmonid industry's investment in product development and market promotion; the recent market gains of Tasmanian mussels in Melbourne retail outlets were also noted by retailers interviewed in this study.

Victorian farmers need to maintain some promotional activity even if they have no intention to boost their individual or combined production level. Without continual market promotional activity they risk falling behind more active interstate or overseas counterparts in market share and/or prices.

Sales growth and stronger producer prices for farmed prawns, other farmed products and the underutilised wild fish, in Melbourne will be determined principally by the level of trade and consumer support for the particular species.

5.7 The Preference For Australian Fish

Although more than 70% of Melbournians agreed with the statement:

I prefer Australian fish and seafood to imported products

in the quantitative surveys, the focus group discussions indicated that this widespread preference carried little conviction. When the subject of country of origin was explored in the group discussions it was found that there is a wide assumption that fish caught in Australia is better, and sold as fresh, while imported fish is frozen and thawed before sale.

Participants were surprised and disappointed to learn that around two thirds of Australia's fish supply is imported and it was evident that they had little or no understanding of the importance of imported fish and seafood to the Australian marketplace.

All other things being equal (including quality and price) most consumers would rather support Australian industries and local economies. A small number of people were prepared to pay about 10% more for Australian product but there was little support for Australian product if it was more than 10% dearer than equivalent imports.

When asked "What actions need to be taken by the fishing industry for more fish and seafood to be bought and eaten by your household" the most common suggestion (from 26% of respondents) was along the lines of *Reduce prices/less expensive/ cheaper/more affordable*. The least common suggestion was the one along the lines of *Fewer imports/more local fish* (1 % of respondents).

More recently, after the field work in this study was completed, changes proposed by Food Standards Australia New Zealand (FSANZ) to the Country Of Origin Labelling (COOL) requirements aroused the ire of the seafood and other industries which felt that imports needed to be clearly differentiated from Australian product with a label identifying the country of origin.

Ironically the Victorian producers' greatest import competition comes from New Zealand, a country which has had exempt status on COOL up to date and whose fish quality is rarely questioned.

This ire was followed by considerable media publicity on the proposals and strong political support but interestingly it seems to have failed to arouse consumers judging from the dearth of correspondence on the matter in the letters pages of the major newspapers.

In October this year FSANZ announced that it *would recommend* changes to the Food Regulation Ministerial Council that loose fish in window displays carry labels identifying the actual country of origin. This legislative reform may help to differentiate the imported fish from imports when the new requirements are actually implemented but the impact of this anticipated differentiation on the demand and prices of Australian product remains uncertain.

The consumer responses noted above give little cause for optimism for Australian fishers or farmers. If 10% of consumers pay the 10% premium some suggested they would for Australian product this could translate to approximately a 1% increase in revenue to the Australian industry.

The reality is that many consumers have eaten imported vannamei prawns, basa and Nile Perch filets and have gone back for more because they were perceived as good value. The increasing tonnage being sold

here each year is testimony to this, consumers have “voted with their feet” and the Australian seafood industry cannot continue to ignore this fact.

The affordability of fish for low income households, and the long standing importance of imports in the Australian retail sector are pertinent but mostly overlooked. The higher price of fresh Australian fish and seafood inhibits consumption in households with low income levels, particularly out of home consumption. In Melbourne where more than 30% of households have an income of less than \$25,000 this is especially pertinent.

Prawns were found to be the most common seafood eaten in Melbourne but there was a direct correlation between income and prawn consumption levels and persons in the lowest income category only ate prawns infrequently.

It is also noteworthy that 11% of interviewees strongly indicated that publicity about high mercury levels in some fish and the safety of imported prawns had led to a reduction in their fish and seafood consumption. A downturn in sales across the board was noted by fish retailers; they lamented that “bad news” undermined consumer confidence in *all* fish/seafood when it focussed on food safety.

If the proposed COOL changes are effective in clearly differentiating the imported prawns and fillets it may well eventuate that the demand for these rises rather than falls: Some 20 years ago when Australian fishers drew media and consumer attention to the mislabelling of the then little regarded, cheaper, ling and blue eye fillets as barramundi by fishmongers it had the unintended consequence of weakening the barramundi market as more consumers tried and were satisfied by the increasingly better know substitutes.

These findings all points to the need for a comprehensive situation analysis to identify the key issues before developing marketing plans. Care is necessary too when drafting promotional material contrasting Australian and imported products and when making adverse claims about imported fish to avoid adding to existing concerns about seafoods overall.

5.8 MSC Ecolabelling, Organic Fish & Alternate Markets

Melbourne consumers have little understanding of commercial fishing and aquaculture practices and aquatic resource management and accept media publicity about overfishing, pollution in the marine environment or overseas problems with fish farms at face value and assume that the Australian resources are equally threatened. Hence the prevailing concerns about seafood safety and the protection of aquatic resources.

In the retail trade interviews and the consumer discussion groups protection of aquatic resources was not mentioned unprompted and it is evidently not a major issue or “top of mind”. When the Marine Stewardship Council (MSC) logo was passed around to participants at discussion groups it was not recognised by anyone but reactions were generally positive, and most perceived the logo as some type of approval.

Once the MSC’s logo and objectives were explained consumers expressed interest and a low key approval of what was perceived to be a “good idea”. The general sentiment was that sustainable responsible fishing is important and must be encouraged. It was evident that some consumers would be willing to pay a little more for fish with MSC certification but there was little interest in paying 20% more.

The discussions indicated that support for the MSC certification is dependent upon consumers having trust and confidence in the organisation and in the approved commercial fishing practices, and that consumer education would be needed to gain the necessary trust.

The community attitude on ecolabelling was also explored in the consumer quantitative survey, which found that 29% of respondents strongly agreed with the statement that they would be prepared to pay 10% more for fish if they could be assured it came from a well managed ecologically sustainable fishery.

This sizeable positive response suggests that ecolabeling can offer a significant market premium for fish if a certifying body such as MSC can gain the necessary consumers’ trust and confidence. Ecolabeling can be beneficial even if it just helps build consumer and community support for the industry without delivering any price premium at all. But the MSC and other certifying organizations will need to invest in an education/promotion program with consumers and seafood distributors to make ecolabeling work effectively in Australia.

The concept of organic fish was one that also had little understanding and mild support dependent on the matter of trust and confidence. It appears that some consumers would be interested in buying organic farmed fish if they had confidence that the fish was in fact grown without hormones, chemical preservatives and free of GMO and did not cost much more than the fish from traditional production. Since the field work was completed there has been strong media focus on organic foods and increasing trade and consumer enquiries about organic fish.

The more “environmentally aware” segment of the population (Section 5.11) would be a likely target for promotion of MSC or organic certified fish and alternate markets such as “growers markets” would provide a natural distribution channel for such produce.

5.9 Consumer Confidence And Trust

Australian consumers overwhelmingly like to eat fish and seafood but a lack of confidence in buying and preparing seafood has been a perennial impediment to increasing consumption.

The lack of confidence and trust when buying fish is a more widespread impediment and far more complex than the seemingly high price of fish because there is ample evidence that some consumers will pay high prices for familiar or favourite fish where they feel confident in doing so. It is an impediment covering environmental certification ecolabelling issues, food safety, the southern rock lobster industry's Clean Green Strategy, packaging and labelling, an impediment that has been underestimated and largely ignored by all links in the supply chain since the NSCS.

According to consumers, the provision of more ideas for quicker easier meals with fish as one of the main ingredients would help increase their confidence in fish preparation and hence consumption, and various other suggestions are detailed in volume II. Many consumers have a "specific recipe syndrome" and think there are only one or two cooking methods/recipes suitable for a particular species. This syndrome can be cured with consumer educational information that a pleasing meal can be had from all species with most of the common cooking methods and proven recipes; this message particularly needs to be passed to young people and their cookery teachers.

Many consumers and food service personnel have an unnecessary fear of the perishability of fish and feel that it must be consumed the same day as purchase whereas most fish's shelf in home has been extended to several days with improved harvesting, handling and distribution practices. This erroneous perception too can be overcome with appropriate informational material for consumers and professional food handlers.

Many are also wondering about the sustainability of commercial fishing and its impact on dolphins and bird life as a result of increasing media coverage of these issues. These concerns need to be recognised and addressed by all parties in the seafood supply chain because they can undermine trust in the seafood industry and any one can quickly act as sales anchors in a short time as has too often been noted in recent years. These issues have been canvassed in great detail in the BRS Community Perception of Fishing study.

In Melbourne, Sydney and Perth consumers commonly seek out familiar types of fish and seafood when they shop and more than a third choose another food rather than another fish if the desired species is unavailable so getting the desired species is important to them.

The consumer's wish is disregarded by the retail outlets which deliberately substitute one species for a more expensive better regarded species; this practice was more evident with fish and chips outlets than with fishmongers or supermarkets. Also relevant is the way the true identity of escolar is masked by operators calling it various names such as butterfish.

A more common problem, acknowledged by a few retailers in this study, is the inadvertent mislabelling of fish by retailers and restaurateurs not familiar with the correct name of a few species in their range, sometimes because of wrong advice by their supplier.

Few retailers are aware that fish names can be checked on the Fish Names List (on the Seafood Services Australia website) but as indicated earlier there are many new operators in the industry and some do not have the literacy skills or computer facilities to access this. The few with internet access mostly reported that they rarely have time to use it given the long hours they work.

Another area of concern to consumers is getting thawed out frozen fish when they want to buy fresh (never frozen) fish. The explicit or implicit sale of thawed out frozen fish or seafood as fresh has been a longstanding national problem that requires attention. But as noted earlier this practice has been ignored by industry, even by the prawn fishers and farmers suffering from depressed prices and whose product reputation is being damaged because these “fresh prawns” do not meet consumer expectations.

The indiscriminate use of the label *fresh* on imported product implies that the product is Australian and this is another area open to deliberate substitution for economic gain by unscrupulous retailers. The recently proposed changes to country of origin labelling requirements may help to reduce this practice but it is unlikely to have much impact unless resources are made available for the delivery of trade education for the uninformed and for the prosecution of the fraudsters.

The seafood industry itself is best equipped to reduce the incidence of deliberate or inadvertent mislabelling of seafood and increase consumer confidence and trust. Seafood industry operators can more easily identify mislabelled seafood than unskilled government officers and so can advise the errant retailer that there appears to be a problem with the label and refer them to the Fish Names List. Retailers who persistently do not comply with fish names can be reported to the 1800 phone *Hotline* set up by the Commonwealth Department of Forests, Fisheries and Agriculture; serial offenders may ultimately need to be “named and shamed”.

Government action and the work of the Fish Names Committee and Seafood Services Australia are not enough, without wider industry recognition and whole of chain action on the mislabelling problems, reform will remain slow.

The matter of trust influenced attitudes about packaged fish, noted in focus group discussions and the quantitative survey. More than 60% indicated they *can't be sure about the quality of frozen fish/seafood* and more than 40% said they *don't buy packaged fish or seafood products*.

This lack of confidence/trust impedes consumer acceptance of high quality frozen products or fresh fish portions in modified atmosphere or vacuum packs which offer extended shelf life; similar attitudes probably prevail with restaurateurs and the food service trade. The confidence/trust issue thereby limits the new product/market opportunities for the Australian seafood industry arising from such technological developments.

5.10 Fish. The Healthy Dish

The seafood industry has been blessed with a continual stream of medical research notices highlighting the many health benefits which may accrue from eating fish, especially the oily species high in omega 3s. The cost of buying the news time and publicity about the beneficial properties of fish would be enormous.

Yet despite all the good news on fish, the common belief that people are buying fish because of its nutritional value, supported by our findings that 71% of Melbournians agree that *I eat fish/seafood because it is better for my health* there has only been a modest increase in consumption since the NSCS, especially in home.

In depth discussion with participants at the end of several discussion groups ascertained that the health benefits of eating fish were clearly understood and attractive but they had not led to any significant increase in per capita consumption for most households. Similar findings were noted in Sydney and Perth in 1999 where consumers made it clear that they recognise the health benefits of fish and seafood and felt that the health message was now “old news” and boring.

While the nutritional attributes and health benefits of eating fish are now widely recognised not all consumers value such benefits. The 40-59 years age group or “baby boomers” had the greatest combined in and out of home consumption while the lowest consumption volume was found in the 15 to 19 years old. This is related to their high levels of disposable income and partly a reflection of the baby boomers’ desire for the health benefits of eating fish while the young see little or no benefit in it at their age.

Consumers do not want food to just be healthy they also want it to be tasty and value for money; the pleasure of eating seafood is valued by all consumer segments and the health benefits are accepted as something of a “bonus”.

Wildes (1993) proclaimed that taste was king when discussing the Think Lite Eat Fat paradox in American eating habits. Australians seem to behave in a similar way to Americans when it comes to enjoying fatty foods. In Melbourne fried fish remains far more popular than the total of the so called healthier fish meals such as grilled and steamed fish.

These findings demonstrate the complexity of consumer attitudes to the health characteristics of fish and suggest that the health message is not as strong a sales driver as is often assumed and that it needs to be more creative than in the past.

They suggest that the health benefits of fish are best used as background or a secondary theme in generic promotional campaigns; the enjoyment of a tasty treat, the difference from other meats and the wide selection offered by fish/seafood are more common sales drivers and therefore warrant prominence in marketing exercises. The traditional health benefits message alone would probably have most appeal for the older age groups.

The increasing community interest in obesity makes it timely to highlight the “low calorie” or slimming feature of fish flesh and the weight control benefits of more fish in the diet. Victoria is blessed in this regard with its local production of mussels, nature’s supreme low fat delicacy with everyday low prices.

The analysis of consumer attitudes to seafood (Volume II) identified five market segments in Melbourne each with its unique cluster of characteristics which can be used by particular companies or species groups to target the more attractive segments rather than follow the mass marketing “one size fits all” approach commonly used in the past.

The benefits of targeted marketing and the characteristics of the five segments in Melbourne are described in the following section.

5.11 Promotion, Price And Adding Value

The seafood industry has long envied the funds expended by the Australian meat corporation (with its various names) on the generic promotions such as the Eat More Meat type believing it's "the way to go". The meat corporation however has worked with a single species in a totally different marketing environment: a species that has mostly struggled with medical reports suggesting lowering meat consumption.

The seafood industry works with a large number of species each with its own consumer image, price resistance level and different marketing environments; furthermore the fishing sector has quota and other constraints on its ability to boost supply in response to increased demand.

Generic promotion raises demand for all familiar species (if all other factors remain the same) which is beneficial for some, especially the farmed species, but counterproductive for popular species such as flathead and roughy which have quota limitations and are already considered expensive by consumers and considered overfished by some.

The seafood industry has to recognise that generic promotion, of the health benefits of eating fish for example, is no panacea. Victorian mussel farmers however produce an inexpensive seafood which is well regarded and capable of increased output as more water is opened up for mussel farming. So they can benefit from generic, specific and other promotions.

Flathead fishers by contrast land a species which is extremely popular in Victoria but suffers from fluctuating supply and prices which annoy everyone in the supply chain not least the consumers who now sometimes face prices of \$40 per kilogram for skinless boneless fillets when auction prices climb to \$8 per kilogram for the whole fish (one with a big head and lots of waste); a daunting price and formidable barrier to consumption for most consumers. The tiger flathead landings from the east coast are limited by quota and so the fishers' best opportunity for increased income is better utilisation of the quota allocation and they have little to gain from generic promotion of fish/seafood.

Orange roughy is another species that would gain little from generic promotion because of its mix of positive and negative characteristics. On the one hand it is attractive to some consumers because of its healthy oily white flesh but others avoid this species nevertheless because of its longevity and overfished status. Moreover Australian roughy fishers have had to contend with decreasing consumer demand because of the high price of the fillet as well as competition from imported roughy fillets from New Zealand which have not been differentiated in the retail display case as imports.

Each of the three species discussed above faces marketing challenges best handled with tailored programs developed after careful analysis of the current market situation with that product.

Five consumer segments were identified with differing clusters of characteristics that can be used to develop targeted marketing programs after identifying the population segments most likely to enjoy a new species/product, respond to a promotion of Australian product or show interest in ecolabelled fish etc.

The five segments were defined as:

<i>a. Uninterested in fish</i>	<i>8% of Melbourne consumers</i>
<i>b. Environmentally aware</i>	<i>23%</i>
<i>c. Not fussy, mainstream</i>	<i>30%</i>
<i>d. Seafood buffs</i>	<i>16%</i>
<i>e. Inexperienced, price conscious</i>	<i>13%</i>

The segmentation data indicate that about 23% of the Melbourne population, the *Environmentally Aware*, are more likely to be responsive to ecolabelling, food safety and organic/natural seafood promotional programs. This segment would not be favourably disposed to promotions on orange roughy, flathead or shark.

The data also suggest that about 16% of the population, the *Seafood Buffs*, are more interested in new products and epicurean experiences and another 13% (*Inexperienced, price conscious*) unlikely to respond to promotion of new products especially if they were not in the lower price brackets. Fifteen percent of the Sydney population were identified as *Environmentally Aware* consumers in the 1999 study but no such cluster was evident in the 1991 NSCS; a *Seafood Buffs* segment comprising 14% of the national population was identified in the NSCS.

The demographic data and other characteristics of the five segments can be used by producers, retailers and restaurateurs to facilitate new product development, select appropriate communication strategies and media and so maximise the cost effectiveness of market development.

Young adults for example are keen technology users and are more likely to access restaurant guides, recipes and other information via their mobile phone or laptop or download cooking demonstrations to their iPods. Most others in the population are not active internet users, and are better targeted with more traditional media such as recipe-information leaflets, in store or television demonstrations or magazines.

Young adults remain a particular marketing challenge for the seafood industry, one requiring more attention and resources for the development of innovative programs to strengthen young peoples interest in seafood and support for the industry.

The book on *The Story of Seafood In Australia* produced by the FRDC and the Primary Industries And Resources Department of South Australia is an excellent resource that can be followed by equally interesting initiatives and project materials for children. The current community interest in tackling child obesity in schools presents a timely opportunity for accessing funds and playing a greater role in State and Commonwealth educational initiatives.

Consumers in Sydney, Perth and Melbourne have indicated that they want information about the provenance of the fish they eat and more quick and easy meal ideas so the preparation and dissemination of such material should be one of the priorities for the newly formed Australian Seafood Promotions Corporation; another area wanting national effort is the promotion of the seafood industry itself to build consumer confidence and strengthen community support for commercial fishing and aquaculture.

The merits and specifications of a *Seafood Smart Card* to meet this need for educational and promotional information have been canvassed in detail in the Sydney study report (Ruello & Associates 1999) while the development of effective promotional posters, utilising food/meal photography rather than “beautiful fishes” pictures, was recommended in the Perth study report (Ruello & Associates 2000) and so need not be repeated here.

Television advertising is unlikely to be cost effective for promoting particular seafood given the limited financial resources in the Australian seafood industry and seems even less useful for generic promotion. Television’s best value lies in cooking programs whereby particular seafoods can be promoted by a celebratory chef (or other influential persons such as prominent sports people) via a sponsoring arrangement.

Even more profitable is a free demonstration or other gratis support by a well regarded chef or personality, who genuinely loves seafood, and these opportunities should be sought out because paid advertising/endorsement are not so well regarded.

Promotion is not the only solution for increasing profitability. Promotion is only effective when the other elements of the marketing mix, the price, the product itself and the place of sale are satisfactory. The product quality for example should consistently meet customer expectations.

Price however is a vexing issue because producers seek higher prices while retailers would like lower or at least steady prices to attract more sales. Consumers of course would welcome lower prices.

The real issue for most consumers regardless of budget is not price per se but the value they see in the product. So industry's challenge is to add value by understanding what consumers want in eating and entertainment and understanding that "value adding" does not necessarily entail a high level or indeed any processing of the seafood.

Value can be added by any or all parties in the supply chain — producers, fishmongers, fish and chips, supermarket outlet or restaurateur. Some suggestions for *adding value* (mostly with minimal capital expenditure) follow:

- improved handling to deliver visibly ultra fresh, or live, fish with its supreme fresh flavour and shelf life
- improved handling to shift more pilchards onto the dinner table (away from animal feed or bait use).
- offering an intangible psychic benefit or "feel good factor", with MSC or organic certification.
- shortening the supply chain and supplying "foodies" at growers markets with seafood and infotainment (pleasure/entertainment from the information on the foods' provenance)
- offering greater product convenience eg skinless boneless fillet ready to cook; warehou is a prime candidate.
- suggest weight watchers/ low calorie dishes; mussels are ideal raw material.
- have more culinary advice and entertainment in store for adults and kids.
- reduced preparation and clean-up time eg cook in the bag/pack dish
- convenience benefits in the packaging eg resealable airtight bag.

Many consumers readily pay for such added value, as they do handsomely when eating out, enabling the parties in the supply chain to increase their income and profitability. The premium price of live fish in restaurants, for example, is acceptable for many consumers because they value the different pleasure they experience from eating an unquestionably fresh fish and the intangible psychic benefit from being a member of an elite group that can afford to do so.

Fish retailers can thereby transform their business by changing from a fish seller to a seafood meal marketer and making the seafood they buy more ready to cook, ready to heat, ready to eat or otherwise perceived as having more value. The value and potential profit margin rises as the seafood becomes more plate ready or exotic.

A conservative increase of just 10% on current retail sales value of around \$270 million per annum on the "fresh" category (estimate from consumer survey) represents a potential gain of \$27 million per annum. This can be attained within several years with just a marginal increase in costs —about 1% of this \$27 million per annum potential benefit — and without any increase in wild fish landings with concerted industry effort. This \$27 million can also be seen as an estimate of the opportunity lost in "doing nothing".

Another area for adding value or increasing profitability for the industry is for fishers, farmers and others in the supply chain to branch out into the tourism/entertainment area and offer recreational, educational or culinary tours of their region or business site/facilities. South Australian aquaculturists have had considerable success in this type of venture and provide a useful model for a seafood trail or ecotourism venture. These types of ventures offer the prospects of added income from tourism and fish sales as well as the opportunity to enhance community image of the industry.

6. Recommendations

The consumers' decision to buy fish or indeed any other food is a very complex one. The Victorian seafood industry should note the smaller household, the increases in cheaper, more casual dining in and out of home and that fish is not the centrepiece of a family meal. It can work together more closely to monitor changes in the Victorian life style especially those regarding eating, shopping and leisure activities and develop more innovative and far more profitable seafood products and related services.

There is however a disconnect in the seafood supply chain in Victoria because most retail outlets have little communication with their customers and with their suppliers and other parties up the supply chain. This has led to a situation where many retail outlet operators are not aware of consumer needs and concerns regarding food purchasing and that their facilities and staffing may be in need of improvement or even total renovation.

Individual operators across all parts of the supply chain need to recognise that this disconnect and other weak links in the supply chain need strengthening if the industry is to make full use of the available aquatic resources and prevailing business opportunities, and prosper.

Product range, seafood safety and quality, promotion, pricing practices and service all play a role in producing a satisfying shopping experience. These factors do not operate independently. The best results come from retailers having an up to date marketing mix that takes account of all these factors in an integrated manner. Therefore all parties in the supply chain need to have a more consumer oriented approach and focus on maximising fish eating quality and consumer satisfaction and not just maximising the volume of production or weekly sales figures.

It is suggested that Seafood Industry Victoria seeks financial support from the Victorian government for professional assistance from the Department of Primary Industries to strengthen the seafood supply chain and build a more cohesive industry on the newly developed Seafood Industry Strategy by developing a detailed Seafood Business Action Plan.

Without strong government support the Victorian seafood supply chain will continue to operate as is and the consumers, the fishers, farmers, wholesalers, restaurateurs and retailers won't get the most from the natural and human resources that abound in Victoria. The state as a whole will miss out in terms of economic, social and health benefits; as indicated in the preceding section the income foregone would be about \$27 million (retail sales value) per annum for a cost of only 1% of this potential benefit.

The tables on the following pages detail recommendations for *adding value* to fish at various points in the Victorian supply chain, and increasing profitability through individual or collective activities. Many of these recommendations are relevant to other states too.

Table 6.1 Recommendations for the entire seafood supply chain.

<i>General Findings</i>	<i>Recommendations for Whole Of Chain Actions</i>
<i>Almost all Melbournians like fish but have some concerns about how fresh it is.</i>	All members of the supply chain need to focus on customer needs and concerns. Improved handling and temperature control will maximise eating quality, shelf life customer satisfaction and profitability.
<i>Concerns about smelly run down premises.</i>	Keep premises bright and clean; free of offensive smell.
<i>Price is a barrier to increased consumption.</i>	Promote lower priced and/or underutilised species eg albacore and mussels via cooking demonstrations, and other promotional and publicity avenues.
<i>Fish is perceived as light meal, entree not a family meal or hearty winter dish.</i>	Consumer and trade education, and publicity, to raise awareness of versatility of fish/seafood. Promote winter cooking ideas and meals.
<i>Most customers prefer fresh to frozen.</i>	Fishers and farmers should focus on fresh and freeze to order or when necessary.
<i>High quality frozen seafood is sold thawed out</i>	Industry should assess how to pack, label and market Australian frozen product to best advantage for industry and consumers: overcome consumer misconceptions and reduce the sale of thawed out frozen as fresh.
<i>Consumers are time poor and want new ideas: convenience, quick & easy eating.</i>	Promote and reward innovation through R &D, industry awards/recognition. Increase range of modern ready to eat and innovative ready to heat products and Quick & Easy cooking ideas: Including singles, small households and children.
<i>Consumers want more information on fishing/aquaculture, and cooking ideas.</i>	Invest more in trade and consumer education and promotion. Develop and offer Seafood Smart Cards with reliable information. Use FRDC, SSA and other resources to save and not reinvent the wheel.
<i>Customers reluctance to buy new species/products.</i>	Producers to arrange free tasting in store, with Seafood Smart Cards and posters on the food/meal. Avail yourself of free publicity & promotional opportunities.
<i>Concerns about food safety and quality.</i>	Seafood safety training & traceability is a must; display business & personal certificates.
<i>Confusion and uncertainty on fish names.</i>	Use recommended names, consult Fish Names List on SSA website. Advise errant fish merchants, “dob in a dodgy dealer” on 1800 number if needed.
<i>Specific recipe syndrome: perception that each species has to be cooked in a unique manner.</i>	Consumer and trade education: almost all fish species can be cooked successfully with the common methods: grilling, steaming, frying or BBQ.
<i>Concerns that fish must be eaten same day as purchase.</i>	Consumer and trade education: modern harvesting and handling practices mean that fish/seafood has shelf life of several days in the home refrigerator.
<i>Consumers are not concerned whether fish is from wild catch or farmed.</i>	Offer a mix of wild and farmed and do not add to customer uncertainty about farmed or wild by engaging in debate or disagreeing with customers view. Refrain from articulating any prejudice on aquaculture or commercial fishing.

Table 6.2 Industry Promotion recommendations for the entire seafood chain to consider, particularly fishers and farmers.

<i>Findings</i>	<i>Recommendations for Whole Of Chain Actions</i>
<i>Aggressive price cutting is common.</i>	Work together to “make the pie bigger” rather than undercutting prices to gain market share.
<i>Consumer uncertainty and some concern about overfishing and ecological sustainability of fishing.</i>	Seek out opportunities in the community for promoting the responsible nature of fishing and the introduction of EMS, Codes of Practices by industry. Tap into the SeaNet and WIN programs for support. Consider MSC/ecolabelling where appropriate. Take supporters and critics on board to personally observe the work practices and publicise Seafood Success Stories. Distribute FRDC booklet <i>From Antarctica to the Tropics</i> and other materials to raise awareness of the fishing industry’s value to the community and nationally. Generic promotion of industry is arguably more important than product promo.
<i>Consumer uncertainty and some concern about ecological basis of aquaculture.</i>	Take every opportunity for promoting the responsible nature of aquaculture, and dispelling concerns about chemical/drug use, locally and nationally. Consider Environmental certification and ecolabelling where appropriate. Encourage and facilitate visitors to farming facilities; use tourism to sell aquaculture and its produce.
<i>Growing interest in organic food.</i>	Examine costs benefits of producing/handling organic farmed fish.
<i>Melbourne has few aquaculture champions in wholesale or retail.</i>	Recognise and reward aquaculture champions wherever possible, especially at industry public function such as Seafood Directions, Australasian Aquaculture Conferences.
<i>Consumer concerns about packaging.</i>	Be mindful of potential ecological damage from resource use. Avoid unnecessary wastage and environmentally unfriendly packaging. Dispose of garbage in bins on shore.
<i>Consumer concerns about packaged fish and seafood, particularly frozen seafoods</i>	Be mindful of consumer uncertainty and wariness about freshness of plastic overwraps, Modified Atmosphere Packaging and frozen packaged foods. Highlight the benefits to the consumer of the technology in use.
<i>Mixed feelings/some concern about sale and despatch of live fish.</i>	Have a section on humane handling in industry Code of Practice handbooks. Display, handle and kill fish humanely. Advise customers to do so. Have a prominent sign to stop curious people tapping glass tank, disturbing the fish in factory, shop or restaurant.
<i>Fish quality, shelf life or delivery often does not meet expectations.</i>	Consistent high quality and shelf life is critical. Schedule delivery to meet customer needs and to arrive on time.

Table 6.3 Recommendations for the retail sector

Findings related to business and product promotion	Recommendations for increasing sales/profitability
<i>Clean bright premises with informed staff are winners.</i>	Owner/manager should be well informed and skilled with seafood; seek training or other assistance as needed. Keep premises modern and clean; have trained staff, who can engage with customers and assist them with information as needed.
<i>Consumers like to see tradesperson at work, boosts sales.</i>	Open oysters and fillet fish in full view of customers where possible.
<i>Most consumers prefer fresh over frozen.</i>	Label fresh product prominently as Fresh. Promote good quality frozen seafood too but sell it direct from the freezer rather than thawed out (see next table).
<i>Most consumers prefer Australian to imports.</i>	Stock Australian product and label imports as per requirements.
<i>Customers want more information on fishing/aquaculture, and cooking ideas.</i>	Distribute Seafood Smart cards with reliable information as described earlier. Simple cooking directions on each fish ticket in retail display. In-store seafood schools and demonstrations. In store suggestions box to elicit comment from customers.
<i>Regional or new foods are sought by “seafood buffs”</i>	Add value with regional and other information; stock unusual species for “buffs”
<i>Consumers prefer photos of meals/ideas on posters rather than beautiful fish photos.</i>	Illustrate promotional posters with foods and mouth watering meals/scenes rather than identification type photos of fish or seafood species.
<i>Health benefits seen as old news; not a sales driver for the young, more for the “baby boomers”, but a bonus for all.</i>	Be more creative with the health message. Use the health benefits features as an underlying theme rather than the dominant or only message with species promotion unless targeting a particular consumer group; emphasise the slimming features of a seafood diet or particular species.
<i>Consumer preference for boneless fillets and fish.</i>	Remove bones and clearly label as BONELESS. Sell tail end of large fillets as boneless portions. Debone/butterfly whole fish to make them more appealing.
<i>Consumers buy other foods if favourite f/s is unavailable.</i>	Window display tickets for poorly known species should nominate an equivalent favourite or well known fish/ fillet.
<i>Consumers are looking for convenience, quality and value.</i>	Emphasise convenience, quality and value: Quick & Easy eating. Offer more in store cooking eg “crabs cooked while you shop”. More ready to heat and eat Or more ready to eat. Resealable bags for convenient handling/re-use of large purchases.
<i>Consumers are wary about freshness of crumbed, battered or marinated fish.</i>	Offer “kits”, with the fillet and the marinade etc in a sachet ready to mix as needed. Ensure coated fish IS fresh and tasty.

Table 6.4 Recommendations for the retail sector

Pricing and Labelling Findings	Recommendations for increasing sales/profitability
<i>Price per kilo ticket is a barrier to increased consumption But consumers will pay for added value.</i>	Try alternate pricing practices: eg per portion, per dozen, per dish etc Offer fish/products in clearly priced open (or see through top) packs & trays Sell meals or ready to cook serves, not just raw fish Sell low value species & products in, by count or packs of 3, 4, etc Promote ideas for cheaper meals eg seafood stir fry or pasta with fish & seafood.
<i>Consumer uncertainty about fish being true to the “fresh” label.</i>	Development of an industry Code of Practice whereby only fish which has never been frozen is described as fresh.
<i>Consumers want information.</i>	Use price tickets and posters creatively to carry key messages re bones, cooking methods, special benefits but avoid overusing the term “Special”. Kids need special attention; make seafood education and promotion fun and interesting.
<i>“Thawed for your convenience” This phrase is ridiculed by some consumers.</i>	Try different wording: <i>This has been thawed; you may purchase it frozen.</i> This is more informative and encouraging to customers: it can help boost sales by suggesting that customers buy and thaw at their convenience.
<i>Some consumers appreciate and seek out good quality frozen seafoods.</i>	They want to see frozen seafood displayed in appropriate cabinets, securely packaged and labelled regarding species and preparation ideas.

7. Conclusions

This study has fulfilled its six objectives of quantifying in and out of home consumption, documenting consumer attitudes, gathering information on species and form sold, examining retailers' attitudes to key factors, documenting the seafood supply chain and proposing a number of actions for increasing sales and consumer satisfaction.

This study has found that almost all Melbournians like to eat fish and seafood and are increasingly eating it when dining out or with take away meals. Per capita in home consumption however has only increased modestly.

Price and a lack of confidence in buying and preparing fish and seafood remain major impediments to increasing in home consumption, and adverse media publicity on chemicals in seafood has become more of an impediment in recent years. The seafood industry can do little to reduce fish prices given the international demand for seafood and growing population here and overseas, but it can do much more to reduce consumer uncertainty and concerns about eating fish and strengthen consumer confidence and trust in the seafood category and the industry which produces it.

The two volumes of reports from this study identify in detail the factors driving in home and out of home seafood consumption and the various factors constraining sales growth. They also describe the changes taking place in the seafood supply chain in Victoria particularly with the supermarket category of outlets gaining market share from the fishmongers (retail market and stores) and the fish and chips outlet.

Recommendations have been made for strengthening the supply chain overall and particularly for greater government and industry engagement with the retail sector to strengthen this particular part of the chain to increase consumer satisfaction, industry prosperity and the State's aggregate benefits from its aquatic resources.

It is also suggested that the Victorian Department of Primary Industries takes a more direct role in the economic development of the seafood industry because it is the entity best equipped to do so in the absence of a strong well funded industry body and because industry development will stagnate without strong assistance.

Recommendations and examples on value adding opportunities across the supply chain and suggestions specifically on the more economically attractive commodity sectors such as mussels have been made to help increase industry profitability.

In all, an increase of about \$27 million per annum on the recent annual retail sales value of \$272 million per annum is possible within several years with better handling and marketing, with just marginal increase in costs and no increase in wild fish landings.

The development and benefits which will accrue to the state will primarily depend on the input and support offered by the Victorian government and how readily the Victorian businesses respond to this assistance to strengthen their supply chains and grasp the opportunities facing them. The future is in their hands.

7.1. Benefits Of The Research

Industry members, researchers, consultants and government agencies have been given access to data from this study as it became available and as early as October 2004 information was exchanged with consultants undertaking research for the National Food Industry Strategy.

The Marine Stewardship Council, Melbourne City Council, the Seafood Importers Association and several other sponsoring parties were given some early information from the focus group discussions in mid 2005.

The Principal Investigator Nick Ruello attended the Australasian Fisheries Communicators' Changing Perception –Commercial Fishing Workshop in Adelaide in May 2005 to draw attention to the need for greater engagement of the retail sector to get it involved to enhance perception of the seafood industry. He has been assisting several young Victorian retailers with informal verbal progress reports on the retail sales study and several of the sponsoring companies and organization with updates.

The early findings from the research were used to formulate comment on the Draft Victorian Research Strategy 2005-2010 for the Fisheries Co-Management Council in May 2005. Our observations on fish labelling practices in Melbourne were noted in a submission to the Food Standards Australia New Zealand on its Proposal 292 Country Of Origin Labelling.

Nick Ruello discussed some of the early findings in a presentation to NSW Farmers Oyster Division at a meeting in Sydney and was able to pass on some suggestions on market promotion in Melbourne.

The information documented in the two volumes of the report on this study will continue to provide a valuable resource for State and Commonwealth agencies and for all parties in the Victorian seafood supply chain for many years until it is superseded by other studies. It has also identified areas for improvement in the supply chain and recommendation on adding value to the industry.

Tangible benefits are not yet evident as the two volumes have not been released but it has been estimated in this study that an increase of about 10% or \$27 million per annum on the current retail sales value is possible within several years with better handling, promotion and marketing of Victorian fish and seafood.

Farmed mussels have been identified as a species with excellent prospects for further sales growth, particularly if new areas of water are opened up for farming by the Victorian government; any prospective increase in output will benefit other states too as Victorian mussels are sold by interstate seafood wholesalers, retailers and restaurateurs.

7.2 Further Research And Development

This study has identified three areas for further research and development:

1. A study of the demand and importance of seafood to the catering and tourism industries in Victoria and the opportunities for seafood industry related ecotourism.

Melbourne and Victoria are well known for the fine food and beautiful coastline and the current study has documented much about the retail side of the seafood industry. A study on the foodservice and tourism aspects of the seafood industry and prospects for seafood related tourism would complement the just completed study on retail sale.

2. Comprehensive qualitative and quantitative research on the fish consumption and attitudes of teenagers to seafood and the seafood industry.

Teenagers are tomorrow's consumers but little is known about their consumption and attitudes to seafood.

3. Development of a Seafood Retailers Handbook, a small book focussing on the retail handling and sale of seafood to complement the Australian Seafood Users Manual.

This proposed handbook would be a valuable resource material, across the nation, given the dearth of Australian resource materials.

7.3 Planned Outcomes

The project outputs at this time are the two volumes of the report and a summary report and so government and industry generally speaking has not yet had time to use the information gathered.

But as noted in the preceding section *Benefits Of The Research* the early research findings were used in preparing advice or information for a number of parties including:

Fisheries Co-Management Council
Food Standards Australia New Zealand
Marine Stewardship Council
National Food Industry Strategy
NSW Farmers Oyster Division
Seafood Importers Association

8. References

AFFA, 2002. Agribusiness supply chains. Learning from others. CD. Agriculture, Forests, Fisheries Australia. Canberra.

BRS 2003. Community perceptions of fishing. Implications for industry image, marketing and sustainability. 20pp. Bureau Rural Sciences. Canberra.

FRDC 1992. National seafood consumption study. Fisheries Research & Development Corporation, Canberra.

FRDC 2002. Retail sale and consumption of seafood. Fisheries Research & Development Corporation, Canberra.

Ruello & Associates 1999. A study of the retail sale and consumption of seafood in Sydney. FRDC project report 98/345 (Vol. I & II).

Ruello & Associate 2000. A study of seafood consumption in Perth and the development of a guide to targeted promotion. FRDC project report 99/342.

Fisheries Co-Management Council 2005. Victoria's Fisheries and Aquaculture Research and Development Strategy 2005-2010 (Fisheries Co-Management Council. Victoria. 44pp.).

Wildes D. 1993. Retailing smallgoods into the 21st century: Trends affecting processed meats. Australian Meat Industry Convention Presentation 1993.

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Melbourne City Council

National Food Industry Strategy

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Seafood Importers Association of Australia

Sealord Australia Pty Ltd

Simplot Australia Pty Ltd

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Victorian Fish & Food Marketers Association

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Woolworths Ltd

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Finally our thanks are extended to Jim Fitzgerald, Tim Howes, Roy Palmer and Perry Smith for assisting with a review and comment on the questionnaires and draft reports.

10. Appendix

Appendix 1 Intellectual Property

The intellectual property arising from this study comprises the databases from the consumer and retailer surveys and the data in Volumes One and Two of the project report. The FRDC proportion of the project intellectual property is 87%.

Appendix 2

Project Staff

The project team for the retail study reported in this volume was :

Nick Ruello

and

Judith Woods

The project team for the consumer studies reported in volume II consisted of:

Graeme Peacock

Melissa Viers

Jackie Mooney

Fiona Collis

Jonathan Jenkin

Liza Burton

Nick Ruello

Appendix 3 Selected fish and seafood prices 2005 and 1991

Species	1991* Average \$/kg	2005# Average \$/kg
Flathead tiger	1.51	> 3.20
Grenadier blue	1.27	>1.80
Oyster Pacific, S. Aust..	4.23	4.83
Prawns South Aust.	10.42	19.00
Salmon Atlantic	12.00	10.00
Warehou (silver)	1.10	About \$2

* ABARE Fisheries Statistics

Industry organization and Melbourne wholesale market sources, based on equivalent whole fish.

Shark prices were not directly comparable because of the changes in species/product mix and a shift from fresh to increasing volumes of frozen product since 1991, however industry sources suggest that the average price of shark supply for retailers has increased by about 50% since 1991.

Appendix 4 to 6

Supermarket Questionnaire

Fishmongers questionnaire

Fish and chips questionnaire

Ruello & Associates

Seafood Consumption And Retail Study Melbourne

Supermarket, Convenience, Food store

Interview No.....

INTRODUCTION

Thank you for agreeing to participate in the Seafood Study for the benefit of industry and consumers. The information collected from every respondent will be treated in the strictest confidence and added to the other data obtained and individual stores will not be identified in any report.

Q.1 a What is your exact position in this business.

Position of respondent : _____

Q.2a Which of the following statements best describes this store? READ OUT

- i Chain supermarket
- ii Convenience store
- iii Food/Other

Q.3 I am going to read out some statements and I want you to tell me if you think the statement is correct for meat, pork, poultry, fish, or none of them. You may nominate none, one, or as many food groups as you like. There are no right or wrong answers; we are just interested in **your opinion**.

The first statement is .(READ OUT FIRST STATEMENT).

To which food group does this statement apply ?

	MEAT	PORK	POULTRY	FISH Fresh/froz	NONE
1. Well supported by advertising	1	2	3	4	5
2. Supply often cannot be guaranteed for in-store promotions	1	2	3	4	5
3. Offers the customer good value for money	1	2	3	4	5
4. Needs more consumer marketing support	1	2	3	4	5
5. Needs more trade marketing support	1	2	3	4	5
6. Customers request more information about its presentation or cooking	1	2	3	4	5
7. Our staff don't have the knowledge to recommend it to customers	1	2	3	4	5
8. Is considered to be too dear by customers	1	2	3	4	5
9. Preferred by more of my customers	1	2	3	4	5
10. Prices fluctuate too much	1	2	3	4	5

Q. 4a Does this store actually sell fresh and chilled or frozen (not prepared like fish fingers) fish and/or seafood. By chilled I mean fish that has been frozen and thawed out for sale?

Yes - Fresh 1

Go To Q. 4b _____ Yes - Chilled 2

Yes - Frozen 3

Go To Q. 4d _____ No 4

Q. 4b What do you believe are the main problems in supplying and selling fresh chilled and frozen fish and seafood? Read out for each type sold. Probe.

Fresh/chilled

No Problems/None 01

Frozen

No Problems/None 01

Q. 4c **Are you free to choose your supplier for** (Read out first form stocked in Q. 4a) **fish and seafood?**
Repeat for each type stocked

	Yes	No	Don't Know
Fresh/chilled	1	2	3
Frozen	1	2	3

Q. 4d **What are the main reasons for this store not supplying and selling** (Read out first of those not stocked in Q. 4a) **fish and seafood ?** Repeat for each type not stocked. If no in Q. 4a ask for all forms.

Fresh/chilled

Frozen

Q. 4e **What would encourage this store to stock and sell** (Read out first of those not stocked in Q. 4a) **fish and seafood?** Repeat for each type not stocked

Fresh/chilled _____ Nothing 01

Frozen _____ Nothing 01

If sell fresh, chilled or frozen fish or seafood ask Q 5; otherwise go to Q. 12a.

I will now ask you a number of questions about the main types of finfish and seafood (shellfish) sold by this store. Please think only about "wet" fish, not pre-packaged (or prepared like fish fingers), canned or bottled products.

Q. 5a What are the main types of fin fish sold by this store over a year, summer & winter ?
Probe up to a maximum of six types. If mention more than six ask for the top six. Record below.

- | | | |
|----|----|----------|
| 1. | 4. | |
| 2. | 5. | None 001 |
| 3. | 6 | |

Q. 5b **And what are the main types of seafood (shellfish) sold by this store over a year ?** Probe up to a maximum of four types. If mention more than four ask for the top four species. Record below.

- | | | |
|----|----|----------|
| 1. | 3. | |
| 2. | 4. | None 001 |

For each type ask Q. 6 to Q. 8 and record opposite : If none in Q 5a and Q 5 b go to Q 12a
Show Card B

Q. 6 Do you buy that live, whole, filleted. cutlet, headed and gutted or in some other form?
 Write in type under Q.5 Multiple response allowed but record each code on a separate line.

Q. 7a On an average week, over summer and winter, how many kilograms of (Read out type and form) **are bought for this store?** Probe for best estimate. If more than one form repeat question.

Q.7b What type of supplier do you generally purchase this from? Record appropriate Code. If more than one form repeat question.

Q. 8 And what proportion of (Read out type and form) **is imported and what proportion was caught in Australian waters?** Ensure total is 100%.

Q. 9a What proportion of the total sales are accounted for by the top selling species (6 fish +4 shellfish) you nominated? Probe for best estimate. Where possible do not accept "Don't Know".

Write In : _____%

Don't Know

101

Q. 10 You mentioned that the main fish & seafood types that you buy are (Read out from Q 5a) **? What are the specific reasons for buying** (Read out first type of fin fish). Repeat for each type.

Record Type (Q.5a)	Reason
xxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxx

Show Card E

Q. 11 Very Important

Not at all
ImportantDon't
Know

1	2	3	4	5	6	7	(8)
---	---	---	---	---	---	---	-----

I would now like you to think about what you believe your customers look for in a store which sells fresh or frozen fish or seafood. Again on a scale of 1 to 7, how important do you believe each of the following factors are to your customers when they choose from which outlet to buy fresh chilled or frozen fish or seafood? Read out rotating to asterisk. Record below.

Q. 11

1. Clean Outlet/store

2. The outlet sells fresh fish and seafood (ie. not frozen)

3. Has consistently low prices

4. Offers Australian fish and seafood

5. Has staff informed about fish and seafood

6. Is easily accessible to the customer

7. Offers a wide variety of fish and seafood products

8. Has friendly staff working there

9. The customer can be confident that fish or seafood sold as fresh has not been frozen

Show Card M

Q.12a Listed are various species of fish and seafood which have been identified by the industry as being under utilised or readily available from farms. For store like this, which types do you consider to have potential for increased sales? Record below.

Q. 12 b For those identified as having potential (Q.12a Codes 1 to 8) Ask Q. 12 b

And what are the main reasons for believing that the potential lies with (Read out each type mentioned in Q. 12a)?

	<u>Q.12a</u>	<u>Q.12b</u> <u>Reason</u>
<u>Wild Species</u>		
Pilchards / sardines (not canned)	01	
Albacore tuna	02	
<u>Farmed Species</u>		
Farm prawns (not just prawns)	03	
Rainbow Trout (Freshwater)	04	
Mussels Australian	05	
Farm Barramundi	06	
None	07	<u>Go to Q. 13a</u>
Don't Know	08	<u>Go to Q. 13a</u>

Q. 13a **What actions need to be taken for your store to stock and sell more fish and seafood products?**

Probe.

Q. 13 b **What actions need to be taken by the seafood industry in general for more fish and seafood to be sold by your store?**

Show Card J

Q. 14 I am going to read out a number of actions that could be taken to increase the sale of fish and seafood products for your business. For each I would like you to tell me if you believe each action would have a (Read out scale) on your sales. Read out each statement.

Great Impact		Some Impact		A Little Impact		No Impact		Don't Know	
1		2		3		4		5	
				Great Impact	Some Impact	A Little Impact	No Impact	Don't Know	
1	A more consistent supply of fish	1	2	3	4	5			
2	Availability of information on cooking and preparation	1	2	3	4	5			
3	More advertising support for fish & seafood	1	2	3	4	5			
4	Greater encouragement of aquaculture industry	1	2	3	4	5			

Q. 15a Thinking about the next five years, do you consider that the sale of fish and seafood products will increase, decrease or remain the same in this store?

Increase	1
Decrease	2
Remain the same	3
Don't Know	4

Q. 15 b And why do you say that?

Classification

For classification purposes only could you please tell me...

Q. 16 a The average weekly sales (turnover) of fish and seafood in this store ?
Write in \$ _____

Ruello & Associates Seafood Consumption And Retail Study Melbourne**Fishmongers****Interview No****INTRODUCTION**

Thank you for agreeing to participate in the Seafood Study, for the benefit of the industry and consumers. The information collected from every respondent will be treated in the strictest confidence, pooled with the other data obtained and individual stores will not be identified.

Q.1 a First of all would you mind telling me your exact position in this business.

POSITION OF RESPONDENT : _____

1b. Is the store part of a group or chain ?

Q. 2 What do you believe are the main problems in supplying and selling fresh & frozen seafood Probe

No Problems/None 01

Q.3 SHOW CARD G How significant do you consider each of the following problems in selling seafood? (Read out)

	Very Signific. Problem	Quite Significant Problem	Not Very Significant Problem	Not a Problem	DON'T KNOW
1. The variable quality of the fish and seafood available	1	2	3	4	5
2. The cost of disposing of waste product	1	2	3	4	5
3. The unavailability of staff with experience in handling and selling fish and seafood products	1	2	3	4	5
4. The lack of knowledge of customers in preparing and cooking fish and seafood products	1	2	3	4	5
5. Uncertainty about whether the fish bought are correctly named	1	2	3	4	5
6. The difficulty of selling fish and seafood if it is labelled frozen	1	2	3	4	5
7. Unfavourable publicity about fish & seafood	1	2	3	4	5
8. Customers dislike buying fish because of the bones	1	2	3	4	5
9. Fish is too expensive to buy	1	2	3	4	5
10. Seafood is too expensive to buy	1	2	3	4	5
11. The low margins necessary to remain competitive	1	2	3	4	5
12. Difficulty getting continuous supply at steady prices	1	2	3	4	5
13. A lack of training in fish handling and hygiene	1	2	3	4	5
14. Difficulty getting continuous supply of a good range of fish	1	2	3	4	5

I will now ask you a number of questions about the main types of fish and seafood sold by this store..

- Q. 4a What are the main types of fin fish sold by this store over a year (summer & winter)? Probe up to a maximum of six types. If mention more than six ask for the top six species. Record below.

1.	4.	
2.	5.	None 001
3.	6	

- Q. 4b **And what are the main types of seafood sold by this store?** Probe up to a maximum of four types. If mention more than four ask for the top four species. Record below.

1.	3.	
2.	4.	None 001

For each type ask Q. 5 to Q 7 and record opposite.

- Q. 5 **Do you buy that live, whole, filleted, cutlet, headed and gutted or in some other form?** Write in type under Q.4 Multiple response allowed but record each code on a separate line.
- Q. 6a **In an average week, over summer and winter, how many kilograms of** (Read out type and form) **are bought for this store?** Probe for best estimate. If more than one form repeat question.
- Q. 6b **From what type of supplier do you generally purchase this from ?** Record name of supplier and appropriate code. If more than one form repeat questions.
- Q.7 **And what proportion of** (Read out type and form) **is imported and what proportion was caught in Australian waters?** Ensure total is 100%.
- Q. 8a **What proportion of the total sales are accounted for by the top selling species (6+4) you nominated** Probe best estimate. Where possible do not accept "Don't Know".

Write In : _____%

Don't Know 101

Q. 8b You mentioned that the main fish & seafood types that you buy are (Read out from Q. 4a/b)
What are the specific reasons for stocking (Read out first type of fin fish from Q. 4a) ?
Repeat for each type.

Record Type (Q.4a)	Reason
xxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxx

Q. 8c Have you noticed any of the following trends with your customers in the last 12 months?

Read Out	<u>Yes</u>	<u>No</u>	<u>Don't Know/</u> <u>Can't Say</u>
1. More concern about the impact of pollution on seafood safety	1	2	3
2. More concern about mercury in fish	1	2	3
3. Concerned about safety of food	1	2	3
4. More concern about the accuracy of the name of the fish sold	1	2	3
5. More concern about overfishing or the sustainability of commercial fishing	1	2	3

Q 8d. Have you noticed any other trends or concerns in food preferences with your customers in the last 12 months

.....

.....

Show Card E

Q. 9a Very Important

Not at all
Important

Don't
Know

1 2 3 4 5 6 7 (8)

We have discussed what you consider important when you buy fresh or frozen fish or seafood for your store. I would now like you to think about what you believe your customers look for in a store which sells fresh or frozen fish or seafood. On a scale of 1 to 7, how important do you believe each of the following factors are to your customers when they choose from which outlet to buy fresh, chilled or frozen fish or seafood? Read out rotating to asterisk. Record below.

Q. 9 a

1. Clean Outlet/store _____
2. The outlet sells fresh fish and seafood (ie. not frozen) _____
3. Has attractively displayed fish and seafood _____
4. Offers Australian fish and seafood _____
5. Has staff informed about fish and seafood _____
6. Is easily accessible to the customer _____
7. Offers a wide variety of fish and seafood products _____
8. Has friendly staff working there _____
9. Has a good reputation for quality fish and seafood _____
10. The customer can be confident that fish or seafood sold as fresh has not been frozen _____

Q. 9b Out of every ten customers, how many would ask for advice about the type (species) of fish to buy and would then buy that fish?

Record number____
Don't Know 11

Q. 10a What actions need to be taken for your store to stock or sell more fish & seafood products
Probe

Q. 10b What actions need to be taken by the seafood industry in general; for more fish and seafood to be sold by your store?

Now I would like to talk about specific types of fish and seafood. **Show Card M**

Q. 11a Listed are various species of fish and seafood which have been identified by the seafood industry as being under utilised. For businesses like this, which types do you consider have the potential for increased sales? Record below.

Q. 11 b For those identified as having potential (Q.11 a Codes 1 to 8) ask Q. 11b

And what are the main reasons for believing that the potential lies with (Read out each type mentioned in Q. 14a)?

	<u>Q.11a</u>	<u>Q.11b Reason</u>
<u>Wild Species</u>		
Pilchards or sardines (not canned)	01	_____
Albacore tuna	02	_____
<u>Farmed Species</u>		
Farmed prawns (not just prawns)	03	_____
Rainbow Trout (Freshwater)	04	_____
Mussels	05	_____
Farm Barramundi	06	_____
None	07	<u>Go to Q. 12</u>
Don't Know	08	<u>Go to Q. 12</u>

Q. 12 In your experience what specific type of consumer promotion, publicity or advertising has been most successful in increasing sales? Record in detail below.

Promotion/Publicity/Advertising

Write In

Write In

Q. 13a	Thinking over the next five years, do you consider that the sale of fish and seafood products will increase, decrease or remain the same in this store?	Increase	1
		Decrease	2
		Remain the same	3
		Don't Know	4

Q. 13 b **And why do you say that?**

For classification purposes only could you please tell me...

Q. 14 **The average weekly turnover (sales) of this store?** Write in \$ _____

Q. 15 **How many full time and part time/casual workers are employed by this store?** 15a Full Time: _____
15b Part Time/casual : _____

Ruello & Associates. Seafood Consumption and Retail Sale Study Melbourne**Fish n Chips and T/Away****Interview No****Introduction**

Thank you for agreeing to participate in the Seafood Study, for the benefit of the industry and consumers. The information collected from every respondent will be treated in the strictest confidence and pooled with the other data obtained and individual stores will not be identified.

Q.1 a First of all would you mind telling me your exact position in this business.

POSITION OF RESPONDENT : _____

1b. Is the store part of a group or chain ?

Q.2 What do you believe are the main problems in preparing and selling fish and seafood?

Probe

No Problems/ None 01

Q.3 Research conducted with other retailers has uncovered a number of problems that retailers of fresh, frozen and cooked fish and seafood have encountered. How significant do you consider each of the following problems that I will read out ?

	Very Signific- ant Problem	Quite Significant Problem	Not Very Significant Problem	Not a Problem	DON'T KNOW
1. The variable quality of the fish and seafood available	1	2	3	4	5
2. The unavailability of staff with experience in handling and selling fish and seafood products	1	2	3	4	5
3. The lack of knowledge of customers in preparing and cooking fish and seafood products	1	2	3	4	5
4. Uncertainty about whether the fish bought are correctly named	1	2	3	4	5
5. The difficulty of selling fish and seafood if it is labelled frozen	1	2	3	4	5
6. Unfavourable publicity about fish & seafood	1	2	3	4	5
7. Customers dislike buying fish because of the bones	1	2	3	4	5
8. Fish is too expensive to buy	1	2	3	4	5
9. Seafood is too expensive to buy	1	2	3	4	5
10. The low margins necessary to remain competitive	1	2	3	4	5
11. Difficulty getting continuous supply at steady prices	1	2	3	4	5
12. A lack of training in fish handling and hygiene	1	2	3	4	5
13. Difficulty getting continuous supply of a good range of fish	1	2	3	4	5

I will now ask you a number of questions about the main types of fish and seafood sold by this store.

- Q. 4a Over a year (summer & winter) what are the main types of fin fish sold by this store?
Probe up to a maximum of six types. If mention more than six ask for the top six species.
Record below.

1.	4.	
2.	5.	None 001
3.	6	

- Q. 4b **And what are the main types of seafood sold by this store?** Probe up to a maximum of four types. If mention more than four ask for the top four species. Record below.

1.	3.	
2.	4.	None 001

For each type ask Q. 5 to Q 7 and record response opposite.

- Q. 5 **Do you buy that live, whole, filleted, cutlet, headed and gutted or in some other form?**
Write in type under Q.4 Multiple response allowed but record each code on a separate line.
- Q. 6a **In an average week over summer and winter , how many kilograms of (Read out type and form) are bought for this store?** Probe for best estimate. If more than one form repeat question.
- Q. 6b **What type of supplier do you generally purchase this from ?** appropriate code. If more than one form repeat questions.
- Q.7 **And what proportion of (Read out type and form) is imported and what proportion was caught in Australian waters?** Ensure total is 100%.
- Q. 8 **What proportion of the total sales are accounted for by the top selling species (6+4) you nominated** Probe best estimate. Where possible do not accept "Don't Know".

Write In : _____ %

Don't Know 101

- Q. 9 You mentioned that the main fish& seafood that you buy are** (Read out from Q. 4a/b)
What are the specific reasons for buying (Read out first type of fin fish from Q. 4a/b ?)
 Repeat for each type.

Record Type (Q.4a)	Reason
XXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX

Q. 10a Do you sell any uncooked fish and seafood products?

Go to Q.10b _____ Yes 1
 No 2
 Go to Q. 10c Don't Know 3

Q. 10b What are the main types of uncooked fish and seafood sold?

Q. 10c Show Card E
Very Important

Not at all
Important

Don't
Know

1 2 3 4 5 6 7 (8)

I would now like you to think about what you believe your customers look for in a store which sells fresh or frozen fish or seafood. Again on a scale of 1 to 7, how important do you believe each of the following factors are to your customers when they choose from which outlet to buy fresh chilled or frozen fish or seafood? Read out rotating to asterisk. Record below.

Q. 10c

1. Clean Outlet/store _____
2. The outlet sells fresh fish and seafood (ie. not frozen) _____
3. Offers Australian fish and seafood _____
4. Has staff informed about fish and seafood _____
5. Is easily accessible to the customer _____
6. Has friendly staff working there _____
7. Has a good reputation for quality fish and seafood _____
8. The customer can be confident that fish or seafood sold as fresh has not been frozen _____

Q. 11a Have you noticed any of the following trends with your customers in the last twelve months?

Read Out

	<u>Yes</u>	<u>No</u>	<u>Don't Know/ Can't Say</u>
1. More concern about the impact of pollution on seafood safety	1	2	3
2. More concern about mercury in fish	1	2	3
3. Concerned about safety of food	1	2	3
4. More concern about the accuracy of the name of the fish sold	1	2	3
5. More concern about overfishing or the sustainability of commercial fishing	1	2	3

Q. 11b And have you noticed any other trends or concerns in food preferences with your customers in the last twelve months? Probe

No/Nothing 01

Q. 12a What actions need to be taken for your store to stock and sell more fish & seafood ?
Probe

Q. 12b What actions need to be taken by the seafood industry in general for more fish and seafood to be sold by your store?

Now I would like to talk about specific types of fish and seafood.

Q. 13a Listed are various species of fish and seafood which have been identified by the fishing industry as being under utilised. For businesses like this, which types do you consider to have the greatest potential for increased sales? Record below.

Q. 13 b For those identified as having potential (Q.13 a Codes 1 to 8) ask Q. 13b

And what are the main reasons for believing that the potential lies with (Read out each type mentioned in Q. 13a)?

	<u>Q.13a</u>	<u>Q.13b Reason</u>
<u>Wild Species</u>		
Pilchards / sardines (not canned)	01	
Albacore tuna	02	
<u>Farmed Species</u>		
Farmed prawns (not just prawns)	03	
Rainbow Trout (Freshwater)	04	
Mussels, Australian	05	
Farmed Barramundi	06	
None	07	<u>Go to Q. 14a</u>
Don't Know	08	<u>Go to Q. 14a</u>

Q. 14a **Thinking over the next five years, do you consider that the sale of fish and seafood products will increase, decrease or remain the same in this store?**

Increase	1
Decrease	2
Remain the same	3
Don't Know	4

Q. 14 b **And why do you say that?**

For classification purposes only could you please tell me...

Q.15a **The average weekly turnover of seafood** Write in \$ _____

Q.15b. **Of these sales what proportion would be accounted for by uncooked** %

None	000	Don't Know	101
------	-----	------------	-----

Q. 16 **How many full time and part time/casual workers are employed by this store?**

16.a Full Time:	_____
16.b Part Time/casual :	_____

The Retail Sale and Consumption of Seafood in Melbourne

Volume II. Consumer Surveys and Focus Group Findings

Report For The



Australian Government

**Fisheries Research and
Development Corporation**

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Prepared By



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Non-Technical Summary

Volume one of this study documents the retail trade survey of a total of 120 supermarket, fishmongers and fish and chips outlets, the overall implications, general discussion, conclusions and recommendations from the entire project. This volume, two, has detailed findings from five focus group discussions and a total of 1005 face to face consumer interviews across the four seasons.

Melbourne's per capita consumption of fish and seafood in and out of home increased 8.3% from 11.5kg to 12.5 kg since the 1991 National Seafood Consumption Study; in home consumption rose 2.3% to 7.8kg while out home consumption rose 19.6% to 4.7 kg per person. Sydney's per capita consumption was estimated as 15.1 kg in 1999 while Perth's was 14.7kg; both cities experienced stronger growth in out of home consumption by 1999 than Melbourne has to date.

Ninety seven percent of Melbournians had eaten fish or seafood in the last year; 62% had eaten fish/seafood in home in the preceding week while 27% had eaten it out of home. There was a direct correlation between the incidence of eating fish/seafood out of home and household income.

Fish was widely seen as a healthy food and most strongly associated with an entertaining entrée, but not regarded as an everyday meal, and too dear to be eaten more often. The adding of variety to the diet, the health attributes of fish and the pleasing taste were the main attractions while a lack of confidence in buying and preparing fish and seafood, and price, were the key factors constraining sales for in home consumption, but the lack of confidence contributed to the out of home consumption growth. Fish, and more so seafood, was seen as something of a tasty treat or indulgence when eating out.

The 40-59 years old "baby boomers" had the greatest combined in and out of home consumption while the lowest consumption volume was found in the 15 to 19 years old; this is a reflection of the baby boomers' higher disposable income and partly a desire for the health benefits of eating fish while the young see little or no benefit at their age despite an awareness of the health attributes of eating fish. Nonetheless fried fish remains far more popular than the healthier grilled and steamed meals.

These findings indicate that the health benefits of fish are best used as background or a secondary theme in generic promotional campaigns. The enjoyment of a tasty treat, "something different" from the wide variety of fish/seafood available are more common sales drivers and therefore warrant prominence.

Canned fish continues to be the most common fish item sold accounting for 36% of purchases in Melbourne; canned fish's popularity, particularly tuna, is attributable to its widespread availability and enjoyment by family and friends, quick and easy versatility, low price and perceived high value. Flake remains Melbourne's most common fresh fish purchase, being number one in fish and chips outlets, while flathead and farmed Atlantic salmon are the next equal best sellers, being main sellers in supermarkets and fishmongers.

More than 70% of consumers do not consider a fish's wild or farmed habitat when making a purchase decision. Atlantic salmon has moved from zero to hero status since 1991 in helping Australian aquaculture's contribution to fish and seafood retail supply rise to 25% for supermarkets and 21% for fishmongers. While prawns are Melbourne's best selling seafood farmed prawns have made little inroad, principally because they receive little promotion. Mussels are inexpensive, well known and widely like and are identified as Victorian aquaculture's most promising produce for increased sales in Melbourne and elsewhere.

Pollution, food contamination and safety continue to concern consumers, especially recent publicity about high mercury levels in fish and the safety of imported prawns: 11% of interviewees indicated that bad media regarding seafood contaminants had led to a reduction in their consumption.

Most consumers have little knowledge on how Australian fisheries and aquaculture are regulated by government but are generally supportive of the concept of ecologically sustainable fisheries and ecolabelling such as that offered by the Marine Stewardship Council. It appears that about one in three would be prepared to pay 10% more for fish if *they could be assured* that it comes from a well managed ecologically sustainable fishery; the issue of trust and confidence in a certifying body, and the industry, was seen as critical to the acceptance and success of ecolabelling.

Restaurants now account for 29% of Melbourne's out of home seafood meals compared to 39% in 1991. A trend to more frequent eating out at mid price eateries such as caf  s, smart fish and chips outlets and inexpensive restaurants, was noted in the Sydney and Perth studies too. This suggests that the price of fish remains an issue for out of home eating too which favours the prospects of the cheaper larger species of farmed fish species which lend themselves to fillet production.

The total value of Melbourne's retail sales of fresh seafood by supermarkets, fishmongers and fish and chips outlets in 2004/05 was estimated at about \$270 million. Concerns about fish species substitution and uncertainty on whether fish labelled fresh had not previously been frozen continue to undermine consumer confidence and trust in the industry and act as significant impediments to the market success of ecolabelling, new packaging developments and sales growth generally.

The supermarket sector's share of the fresh fish/seafood category has risen to 32% from 16% in 1991; this growth has come mainly at the expense of the specialist fishmonger outlets who now have 51% of sales volume, down from the 65% enjoyed in 1991. This has come about because of the more customer oriented, innovative and energetic approach of the supermarket chains.

Almost 40% of consumers surveyed would like to see more fresh local seafood available to buy rather than see less local seafood available to allow for an increase in recreational fishing, while 7% would prefer more fish made available for recreational fishing. Slightly more than 40% felt that it was about right as it is now (12% did not know).

Consumers recognise the benefits to the local economy when they buy Australian produce and believe that some imports may not be as good as local fish. About seven out of ten like to buy familiar species and prefer Australian to imports but focus group discussion indicated that only a small minority were prepared to pay about 10% more for Australian seafood products. These findings point to the need for producers and retailers to consistently deliver on the promise of higher quality from Australian **fresh** produce particularly if it carries a premium price.

A detailed analysis of Melbourne consumer attitudes identified five market segments in the population with different demographics and consumption patterns. Most of these market segments can be served profitably with targeted market development initiatives. Mass marketing or generic promotion can best be used to raise consumer confidence and trust and the demand for inexpensive species with a high consumer acceptance such as several wild and farmed species as identified in this study.

The Victorian seafood supply chain, particularly the retail sector, needs strengthening with greater communication flow and business knowledge to work effectively at boosting confidence in the Australian industry. With a more collaborative effort all sectors can fund market and product development and the dissemination of quick and easy, meal ideas to increase retail sales and consumer satisfaction in a more profitable manner.

1. Introduction

1.1 Background

The retail sale and consumption of seafood in Melbourne was last examined in 1991 as part of the National Seafood Consumption Study (NSCS) undertaken by a consortium of consultants for the Fisheries Research And Development Corporation (FRDC 1992). This study has less relevance now because of the enormous changes in food consumption and marketing and the economic environment in Australia since then.

In 1999 the Fisheries Research And Development Corporation (FRDC) and various industry organizations provided funding for a repeat seafood consumption study in Sydney and Perth (Ruello & Associates 1999, 2000). Since then various Victorian industry organizations and government agencies have been seeking up to date information on seafood consumption in Melbourne from Ruello & Associates.

So in 2003 the company was encouraged by fishers, farmers and others in the supply chain to lodge an application for Research & Development funding with the FRDC to undertake a new study on the retail sale and consumption of seafood in Melbourne to provide up to date information for Melbourne and complement the Sydney and Perth studies of 1999. This encouragement included offers of cash contributions from a number of industry members and government agencies.

The Victorian Fisheries Research Advisory Body had expressed an interest in supply chain management in its advertisement for preliminary research proposals in 2004 and this subject was therefore added in the final application to the FRDC.

The Melbourne study was designed along the same methodology as that developed in the national study and the Sydney and Perth studies (Ruello & Associates 1999, 2000) so that trends and changes since 1991 could be examined, and where relevant and possible, compared across these cities.

The study had two major parts: the retail trade study which has been reported in Volume I and a qualitative and quantitative study of fish consumption, purchasing and consumer attitudes which is reported in this volume. Volume one also has a general discussion, overall implications, conclusions and recommendations from the entire project.

Where necessary, the term *fish* is used to differentiate finfish from crustaceans, molluscs and other invertebrates which are categorised as *seafood*, in discussing the quantitative data in this volume.

1.2 Need For The Study

Many seafood retailers, wholesalers and importers had approached Ruello & Associates over the past few years for information on aggregate retail sales, main species consumed in home and out of home and Melbourne consumer attitudes to various factors. However these persons could only be referred to the 1992 report on the national seafood consumption study for assistance. This situation was not satisfactory for government nor industry since there had clearly been many changes in Melbourne since 1991 and the Sydney study of 1999 had little quantitative data relevant to the Melbourne scene.

Up to date market and consumer information was needed to underpin the various industry and species Research & Development plans and strategies that were being planned and to provide reliable trade information (qualitative and quantitative) for government agencies and committees developing fisheries and aquaculture management plans.

Given the many changes in eating habits and the business environment (general food supply and demand, introduction of more aquaculture species and others) over the past decade or so there was a need for detailed reliable information on the retail sales and consumption of seafood in Melbourne to guide the whole supply chain, including fishers and farmers, on consumer wants and attitudes.

The changes in the ethnic mix of retailers and greater use of imported species by these retailers and their customers also warranted research. Industry also needed the data to make better use of a few underutilised species as well as the better known species.

There was also a growing need to examine Melbourne consumers' attitudes to aquaculture and commercial fishing activities, food safety, environmental issues and ecolabelling (which were all gaining much media attention) and their likely influence on seafood sales.

2. Objectives

The project objectives were:

1. To measure the quantity and species/types of seafood consumed in home and out of home.
2. To document consumer attitudes to key factors affecting seafood purchases and consumption.
3. To gather reliable information on the species, source and volume of seafood sold by various types of retail outlets.
4. Examine and document retailers' purchases, behaviour and attitudes to key factors (eg wild/farmed).
5. Examine and document the supply chain management from Victorian fishers and farmers to retailer.
6. Propose actions that can be taken individually and collaboratively by fishers, farmers and others in the supply chain to increase retail sales and consumer satisfaction in a more profitable manner.

3. Methods

The 1991 National Seafood Consumption Study examined seafood consumption patterns across four seasons in all Australian capital cities and regional areas. The 2005 Melbourne study aimed to repeat the quarterly waves of surveying to identify changes in seafood consumption and purchasing since the 1991 study was undertaken. Following the methodology adopted in the previous study, Melbourne residents were surveyed to identify their in-home and out-of-home fish/seafood consumption.

Interviewing was conducted at the tail end of each season:

- Winter (Wave 1) occurred during August 04;
- Spring (Wave 2) occurred in November 04;
- Summer (Wave 3) occurred during Feb 05; and
- Autumn (Wave 4) occurred in May 05.

The in-home questionnaire was administered by personal interviews to 1005 main grocery buyers. It measured both in-home and out-of-home patterns of fish/seafood consumption for the main person in the household responsible for buying groceries and/or preparing meals.

The out-of-home component of this survey was administered to non-grocery buyers to measure their out-of-home fish/seafood consumption patterns. The questionnaire was left with in-home respondents to be completed by the other members of the household and returned using a reply paid envelope – 243 self completion surveys were returned.

It should be noted that each in-home seafood consumption questionnaire also included an out-of-home fish/seafood consumption section, and therefore a total of 1248 out-of-home interviews were conducted, distributed as show in the table below.

Number of Completed Interviews					
	Total	Wave 1 Winter 04	Wave 2 Spring 04	Wave 3 Summer 05	Wave 4 Autumn 05
Out of Home Seafood Consumption Survey (self completion)	243	70	80	51	42
In Home Seafood Consumption Survey (face to face interviews)	1005	245	253	259	248
Total Out of Home Interviews (Household grocery buyers and non-grocery buyers)	1248	315	333	310	290

As per the 1991 survey, the 2005 in-home data has been weighted up to the population of households in Melbourne based on the household structure, while the data for the 2005 out-of-home component has been weighted by age within gender up to the adult population (aged 15+ years) within Melbourne.

Each table and chart used throughout this report indicates both the number of weighted and unweighted respondents – ‘N’ is used to present the population size, while ‘n’ shows the sample size.

Any significant differences, tested at the 95% confidence level, identified in the report are indicated with an alphanumeric character superscript corresponding to the data column labelled with that character, as shown in the example below: the superscript ^B alongside the 51% in the **Male** column (column A) indicates that the 51% is a statistically significant different result to the 47% shown for **Female** in the B column.

Significance test example:

	Male (A)	Female (B)
Did not eat fish/seafood in last week	51% ^B	47%

Throughout the report, it should be noted that a ‘–’ in a data cell means no response while ‘0’ means the response percentage is zero or less than 0.5% and therefore has been rounded down to zero.

3.1 Focus Groups

The qualitative study consisted of five focus group discussions with domestic food buyers living in Melbourne, recruited and executed as follows:

- Participants were initially informed that they were to attend a focus group focusing on **general food preparation and consumption**.
- All participants were required to be the main person in their household responsible for buying and preparing food for the household. They also had to prepare food at home at least four times a week, and at least occasionally buy canned or fresh fish or seafood.
- The key recruitment variables were:
 - Gender (four groups women, one group men);
 - Working/ non-working; and
 - Age (18-44; 45 plus).

- A cash incentive of \$50 for participation was paid to all participants.
- Three focus groups took place on 28th July 2004, and two on 29th July in Melbourne suburbs. The duration of discussions was approximately 90 minutes.

The five groups conducted are outlined below.

Group Number	Specifications	Date	Time	Number of Attendees
1.	Women, main meal preparer, 45 years and over, not working	28/06/04	12am	9
2.	Women, main meal preparer, 45 and under, working	28/06/04	6pm	9
3.	Men, main meal preparer, half under 45, half over 45, working	28/06/04	8pm	8
4.	Women, main meal preparer, 45 and under, not working	29/06/04	12am	9
5.	Women, main meal preparer, 45 years and over, working	29/06/04	6pm	9

4. Results and Discussion

Part 1 – Consumer Survey Findings

4.1 Fish/Seafood Consumption

4.1.1 Level of Consumption Per Person

Over the 2004/05 period, it is estimated that, on average, each Melbourne resident consumed 240.1 grams of fish/seafood per week (149.7 grams in-home and 90.4 grams out-of-home). This represents an increase of 18.5 grams per person per week from 1991 (or 8.3 percentage points over 14 years).

In-home consumption has remained virtually unchanged since 1991, yet still accounts for a large proportion of the fish/seafood eaten by Melbournians in a week – close to 60% of the total consumed. In contrast, out-of-home consumption has increased by an average of 14.8 grams per person per week, or an increase of 19.6 percentage points over the 14 years.

Table 4.1.1 – Summary of Average Weekly Consumption of Fish/Seafood (grams)

	1991	2005	Change
In-home#	146.0	149.7	+3.7 (2.5%)
Out-of-home*	75.6	90.4	+14.8 (19.6%)
Total	221.6	240.1	+18.5 (8.3%)

Includes fish/seafood eaten in-home by visitors allocated evenly across household members. Excluding fish/seafood eaten by visitors, equates to 141.5 grams eaten in-home per household member per week.

* Includes fish/seafood bought out-of-home only for children (i.e. Out-of-home respondent did not eat fish/seafood at that occasion, only a child). Excluding fish seafood eaten by children, equates to 86.8 grams per person per week.

Applying these same estimates and extrapolating to yearly consumption, this equates to 11.5kg per capita consumption in 1991 and 12.5kg in 2005 – an increase of 1kg over the 14 years.

The Melbourne per capita consumptions is lower than that found in Sydney and Perth in 1999.

- Sydney: 15.1kg in 1999 compared to 13.52kg in 1991 – an increase of 12.7 percentage points from 1991, with in-home increasing by 8.4 percentage points and out-of-home by 19 percentage points; and
- Perth: 14.7kg in 1999 with no overall change since 1991– in-home decline of 27 percentage points offset by out-of-home increase of 37 percentage points.

4.1.1.1 In Home Fish/Seafood Consumption

The estimated average weekly in-home consumption of fish/seafood over the 2004/05 period was 149.7 grams for each Melbournian (including consumption by visitors) and an average of 384.8 grams for every household in Melbourne (including consumption by visitors).

There were several interesting observations in in-home fish/seafood consumption for 2004/05:

- The average weekly in-home consumption did not differ significantly between males (134.6 grams) and females (147.7 grams);
- In-home fish/seafood consumption was greater among those aged 40 to 59 years (181.1 grams) and 60 or more years (187.2 grams) than all other ages – 0 to 2 years being the lowest (86.4 grams) and followed closely by 15 to 19 year olds (88.8 grams);
- Single households ate less in a week, on average, than all other household structures (210.0 grams). This was followed by couple households without dependent children (342.3 grams) that ate significantly less than young families with dependent children (514.0 grams) and mature families with dependent children (491.6 grams); and
- Households with a combined income of \$25,000 or less ate less in-home in a week (294.4 grams) than those with a higher income – \$25,000 to \$40,000 (446.8 grams).

Weekly in-home: consumption by households did not vary significantly by quarter: Winter 2004: 355.0 grams, Spring 2004 375.5 grams, Summer 2005 439.4 grams, and Winter 2005 365.1 grams, but the combined Spring-Summer consumption is larger than the Autumn-Winter volume.

Table 4.1.1.1 – Average Weekly Fish/Seafood Consumption (grams) by Individuals: In Home ¹

	Gender		Age Group						
	Male (A)	Female (B)	0–2 (C)	3–9 (D)	10–14 (E)	15–19 (F)	20–39 (G)	40–59 (H)	60+ (I)
Consumption in 2005 (gms)	149.7	147.7	86.4 ^{HI}	94.5 ^{HI}	118.4 ^{HI}	88.8 ^{HI}	114.2 ^{HI}	181.1	187.2

Base: All household members weighted by household structure (n=1,005; N=3,062,000)

Table 4.1.1.1 – Average Weekly Fish/Seafood Consumption (grams) by Households: In Home cont...

	Total	Household Structure				Household Income				
		Single (A)	Couple (B)	Young Family (C)	Mature Family (D)	<\$25K (E)	\$25-\$40K (F)	\$40-\$60K (G)	\$60-\$80K (H)	Over \$80K (I)
Consumption in 2005 (gms)	384.8	210.0 ^{BCD}	342.3 ^{CD}	514.0	491.6	294.4 ^{GI}	446.8	423.5	381.8	429.6

Base: Households weighted by household structure (n=1,005; N=1,191,000)

¹ Total consumption: 149.7 grams includes visitors, however demographic and socio economic breakdowns are based on household members only.

4.1.1.2 Out of Home Fish/Seafood Consumption

The estimated average weekly out-of-home consumption of fish/seafood over the 2004/05 period was 90.4 grams for each Melbournian (this includes fish/seafood bought out-of-home for children under 15 years of age).

There were several interesting observations in relation to out-of-home fish/seafood consumption for 2004/05:

- The average weekly out-of-home consumption did not differ significantly between males (97.9 grams) and females (83.5 grams);
- Out-of-home fish/seafood consumption was greatest among those aged 40 to 59 years (113.4 grams per week) and significantly lower for those aged 60 or more years (55.5 grams) – also lower when compared to those aged 20 to 39 years (89.2 grams). This is in contrast to the pattern of in-home consumption which indicated that those aged 60 or more years ate more fish/seafood at home than any other age group;
 - *Combining in and out-of-home consumption shows that, on average in a week, those aged 40 to 59 years consumed more fish/seafood than any other age group (294.5 grams). They were followed by those 60 or more years (242.7 grams) and at a distance by those 20 to 39 years (203.4grams) and 15 to 19 years (135.9 grams).*
- On average, those in full-time employment consumed more fish/seafood out-of-home in a week than those who were not employed (125.2 grams and 50.6 grams);
- Marital status and country of birth were not statistically significant influencing factors on out-of-home consumption; and
- The lowest consumption out-of-home was recorded in households with income of less than \$25,000 per annum.

Table 4.1.1.2 – Average Weekly Fish/Seafood Consumption (grams): Out of Home ²

Consumption in 2005 (including children)

Total	Household Type			Gender		Age (in years)			
	Single (A)	Couple (B)	Divorced/ Separated (C)	Male (D)	Female (E)	15 – 19 (F)	20 – 39 (G)	40 – 59 (H)	60+ (I)
90.4	93.5	92.0	88.1	97.9	83.5	66.5	90.4 ^I	117.7 ^I	55.6

Base: Out-of-home respondents weighted by adult population in Melbourne (n=1,248; N=2,463,000)

Table 4.1.1.2 – Average Weekly Fish/Seafood Consumption (grams): Out of Home cont...

Consumption in 2005 (including children)

Total	Employment			Country of Birth	
	Full-time (J)	Part-time (K)	None (L)	Australia (M)	Another Country (N)
90.4	127.3 ^L	94.5 ^L	55.6	92.3	85.8

Base: Out-of-home respondents weighted by adult population in Melbourne (n=1,248; N=2,463,000)

² Total consumption: 90.4 grams includes fish/seafood bought out of home for children under 15 years of age, however demographic and socio economic breakdowns are based on adult population only.

4.1.2 Consumption Incidence in the Last 12 Months

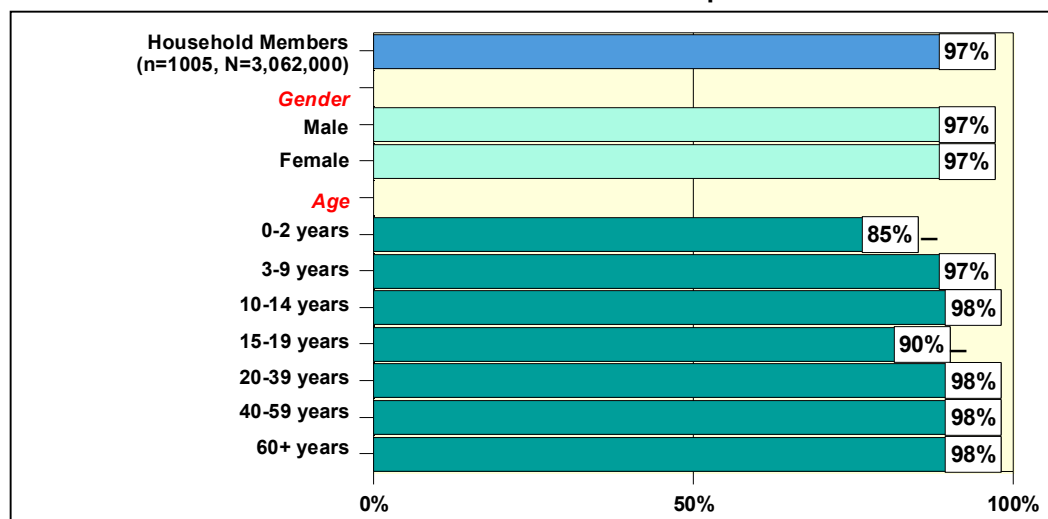
In-home respondents (main grocery buyers) were asked to indicate which members of their household had eaten fish or seafood in the last year. Overall, almost all Melbourne residents (97%) had eaten fish or seafood in the last year. A minority (3%) had not eaten any fish or seafood. Of note:

- There was no difference in fish/seafood consumption in the last year by gender; and
- The incidence of fish/seafood consumption was lower among those aged 0 to 2 years (85%) and 15 to 19 years (90%) when compared to all other ages.

In 6% of households, at least one member had not eaten fish/seafood in the last year. This was higher among young family households, that is, those with dependent children (11%) than all other household types: single households; couple households; and mature family households (4% each).

The Bureau of Rural Sciences (2003) reported that 95% of Australians aged 18 years and over ate seafood. In the Sydney consumption study (Ruello & Associates 1999), 9% of Sydney residents had not eaten any fish or seafood in the last 12 months.

Chart 4.1.2 – Incidence of Fish/Seafood Consumption in the Last Year



Base: All household members weighted by household structure (n=1,005; N=3,062,000)

Q6: Which members of this household have eaten fish or seafood in the last year? And who have not eaten fish or seafood in the last year?

▼ Indicates significantly lower compared to all other ages

4.1.3 Consumption Incidence in the Last Week

In-home respondents (main grocery buyer) indicated for every meal eaten over the week prior to interview whether any type of fish or seafood was consumed. It may have been the main part of a meal or an ingredient (for example, canned fish, marinara mix, prawns or anchovies on a pizza, fish paste or fillings in sandwiches or a casserole). And they or someone else may have prepared it, or it may have been bought.

Overall, just over three in five in-home respondents (62%) had eaten some fish/seafood at home, one in four (27%) had eaten fish/seafood out-of-home; one in four (26%) had not eaten any fish/seafood in that week; and 15% had eaten fish/seafood both in and out-of-home over the week.

In Home Consumption Differences

- Respondents from mature family households were more likely to have eaten fish/seafood at home in the week prior to interview (75%) than all other household types;
- Coinciding with a higher incidence of in-home fish/seafood consumption in mature family households was a higher incidence of consumption based on the age of the respondent. Those aged 60 or more years (71%) and 40 to 59 years (64%) were more likely to have eaten fish/seafood in-home compared to those aged 20 to 39 years (53%);
- There was no significant relationship between household income and the likelihood of fish/seafood having been eaten in-home;
- There was no difference in the proportion of males and females who had eaten fish/seafood in-home, out-of-home or had not eaten fish/seafood in the last week; and
- The incidence of consumption did not vary by the time of year for in-home respondents.

Out of Home Consumption Differences

- While those aged 60 or more years were more likely to have eaten fish/seafood in-home, they were less likely to have eaten out-of-home in the last week (16%) when compared to those 40 to 59 years (33%) and 20 to 39 years (31%).
- **There was a direct relationship between household income and the *likelihood of fish/seafood having been eaten out-of-home*.** Two in five (43%) respondents from households with an income of \$80,000 or more ate fish/seafood out-of-home in the week prior to interview, followed by three in ten (30%) of those earning between \$40,000 and \$60,000. The incidence of out-of-home fish/seafood consumption was lowest in households earning below \$25,000 (15%).

Not Eaten Fish/Seafood Differences

- A higher proportion of in-home respondents aged 20 to 39 years had not eaten fish/seafood either in or out-of-home in the week prior to interview than those aged 40 to 59 years (31% and 23% respectively).

Table 4.1.3 – Fish/Seafood Consumption in the Last Week (%)

	Total	Household Type				Gender		Age (in years)			
		Single (A)	Couple/ Family (B)	Young Family (C)	Mature Family (D)	Male (E)	Female (F)	15 – 19 (G)	20 – 39 (H)	40 – 59 (I)	60+ (J)
Respondents	1005	237	205	412	151	235	770	16	368	398	221
Weighted Respondents ('000)	1191	328	290	380	193	289	902	13*	389	463	324
At home	62	58 ^D	59 ^D	62 ^D	75	59	63	67	53 ^{IJ}	64	71
Out-of-home	27	29	29	25	29	28	27	7	31 ^J	33 ^J	16
Not eaten	26	28	28	27	19	29	25	33	31 ^I	23	24

Table 4.1.3 – Fish/Seafood Consumption in the Last Week (%) cont...

	Total	Waves				Household Income				
		Wave 1 (Winter 2004) (K)	Wave 2 (Spring 2004) (L)	Wave 3 (Summer 2005) (M)	Wave 4 (Autumn 2005) (N)	<\$25K (O)	\$25-\$40K (P)	\$40-\$60K (Q)	\$60-\$80K (R)	Over \$80K (S)
Respondents	1005	245	253	259	248	190	94	118	99	197
Weighted Respondents ('000)	1191	287	305	312	287	264	119	135	106	206
At home	62	61	60	68	58	61	66	61	59	66
Out-of-home	27	31	30	27	22	15 ^{QS}	24 ^S	30	22 ^S	43
Not eaten	26	26	23	23	32	32 ^S	24	28	29	18

* Caution low sample base

Base: In-home respondents weighted by household structure (n=1,005; N=1,191,000)

4.1.4 Actions Required to Improve Fish/Seafood Consumption

Respondents of the in-home and out-of-home questionnaires were asked to suggest actions that could be taken by the fishing industry to increase consumption. The emphasis varied depending upon the questionnaire completed:

- In-home – ‘...for more fish and seafood to be bought and eaten by your household’; and
- Out-of-home – ‘...to increase the likelihood of people ordering seafood meals when ordering out’.

More in-home and out-of-home respondents thought that *reducing the price of fish/seafood* and *making it more affordable* would have the greatest impact on consumption levels (26% and 19% respectively). Interestingly, when prompted, in-home respondents rated price as less important in the purchase decision than correct labelling. The Bureau of Rural Sciences (2003) found a *reduction in price* likely to influence 70% of Australians (when prompted) to purchase more seafood.

Perhaps most important was the large percentage of respondents that suggested that ‘nothing’ could be done by the industry to raise their consumption; 26% and 46% for in home and out of home respectively. The corresponding **national** figure for in home consumption in 1991 was 29%.

A number of **product features** were mentioned. Among the more common were:

- *More sustainable fishing practices and no over fishing* (10% in-home and 4% out-of-home); and
- *Buyers can be sure of freshness* (8% in-home and 10% out-of-home respectively).

Various promotion suggestions were mentioned by one in ten or fewer respondents. The more frequently mentioned were:

- *General promotion and advertising to increase awareness* (7% in-home and 10% out-of-home); and
- *To provide recipe and preparation ideas at retail outlets and through other communication mediums* (7% in-home and 7% out-of-home respectively).

Distribution factors were less often mentioned as a means to increase consumption: *more readily available at more retail outlets* (7% in-home and 5% out-of-home).

**Table 4.1.4 – Industry Actions Required to Increase Fish/Seafood Consumption
(% of respondents)**

	In Home*	Out of Home#
Respondents	1005	243
Weighted Respondents ('000)	1,191	2463
Reduce price/less expensive/cheaper/more affordable	26	19
More sustainable fishing practices/ no over fishing	10	4
Ensure its freshness/fresher fish	8	10
More readily available/more retail outlets/fishmongers	7	5
Market/promote/advertise more/increase awareness	7	10
Recipe ideas/how to prepare/preparation ideas at retail outlets/ on TV, etc.	7	7
From clean/unpolluted waters	4	3
Free from contaminants/mercury	4	4
More information about health benefits/place in diet	4	9
More information about species/what is available/origin/when best, etc.	3	6
More farmed fish	2	1
Better presentation/display on retail outlets	2	2
Less frozen fish	2	1
More information on labels/clear labelling eg. date caught/ if farmed/frozen, etc.	1	1
Fewer imports/more local fish	1	2
More bone free fish	1	2
Other mentions	2	5
Don't know	14	1
Nothing	26	46

Base: * In-home respondents weighted by household structure

Respondents (out-of-home questionnaire) weighted by adult population in Melbourne

* Q29: What actions need to be taken by the fishing industry for more fish and seafood to be bought and eaten by your household?

Q18: And can you suggest any actions that could be taken by the fishing industry to increase the likelihood of people ordering seafood meals when eating out?

4.1.5 Market Segmentation

In-home respondents were asked to indicate their level of agreement with 18 statements about seafood using a five point scale from 1 *strongly disagree* to 5 *strongly agree* (3 was *neither agree nor disagree*). These statements (in Question 24b) were essentially based on those used in the 1991 seafood consumption study, although there were some exclusions and minor adjustments to make them current. Responses to these statements were used to cluster in-home respondents (main grocery buyers) into different market segments. A five-cluster solution was selected as the most appropriate for segmenting the population into different attitudinal clusters.

The purpose of producing these segments was to identify different market attitudes to fish and seafood that could be relevant for targeted marketing strategies. It is important to recognise that particular attitudes may appear in more than one segment, however, it is the strength of agreement in a segment that determines the unique view of that segment.

The five segments were defined as:

- Uninterested in fish (8% of respondents)
- Environmentally aware (23%)
- Not fussy, mainstream (30%)
- Seafood buffs (16%)
- Inexperienced, price conscious (13%)

A description of each of the five segments follows after the demographic and attitudinal data tabled below.

Table 4.1.5a – Demographic Composition of Segments (%)

	Total*	Household Type				Gender		Age (in years)			
		Single	Couple	Young Family	Mature Family	Male	Female	15 – 19	20 – 39	40 – 59	60+
Uninterested	8	29	19	39	13	24	76	2	31	39	28
Environmentally aware	23	25	28	30	17	20	80	1	26	47	26
Not fussy, mainstream	30	26	22	37	15	26	74	0	41	34	24
Seafood buffs	16	22	29	22	26	26	74	1	24	38	38
Inexperienced, price conscious	13	34	19	36	11	25	75	2	40	32	26
Total	100	28	24	32	16	24	76	1	33	39	27

Table 4.1.5a – Demographic Composition of Segments (%) cont...

	Total*	Employment			Household income				
		Full-time	Part-time	None	<\$25k	\$25-40k	\$40-60k	\$60-80k	Over \$80k
Uninterested in seafood	8	32	16	52	37	10	10	6	13
Environmentally aware	23	31	21	48	21	9	11	9	18
Not fussy, mainstream	30	33	25	41	17	9	15	11	16
Seafood buffs	16	36	15	49	23	14	6	8	25
Inexperienced, price conscious	13	33	25	43	21	10	12	8	15
Total	100	33	21	46	22	10	11	9	17

*Ten percent of the population could not be classified to a segment as they did not provide an answer to at least one statement.

Base: In-home respondents weighted by household structure.

**Table 4.1.5b – Rating of Attribute Importance
When Purchasing at Outlet (average scores)**

	Total	Segment 1 (A)	Segment 2 (B)	Segment 3 (C)	Segment 4 (D)	Segment 5 (E)
Respondents	400	29	72	141	86	47
Weighted Respondents ('000)	467	37	83	158	100	57
Clean outlet/store	6.8	6.8	6.9	6.9 ^E	6.8	6.6
Has good reputation for quality fish/seafood	6.3	5.9 ^D	6.5	6.2 ^D	6.7 ^E	6.1
Is easily accessible to me	6.2	6.6	6.3	6.2	6.2	6.1
It sells fresh fish and seafood (i.e. not frozen)	6.2	5.4 ^{BCD}	6.6 ^{CE}	6.1 ^D	6.7 ^E	5.7
Has friendly staff working there	6.1	6.1	6.4	6.1	6.2	6.2
Offers a wide variety of fish and seafood products	6.1	5.6 ^D	6.2 ^{CD}	5.8 ^D	6.6 ^E	6.1
I can be confident that fresh fish or seafood has not been frozen	6.0	5.2 ^{BCD}	6.4 ^E	6.1 ^{DE}	6.7 ^E	5.2
I frequently shop there	5.9	5.8 ^D	6.0	5.7 ^D	6.4 ^E	5.8
Has attractively displayed fish and seafood	5.8	4.8 ^{BCD}	6.3 ^{CE}	5.7 ^{DE}	6.3 ^E	5.1
Has consistently low prices for fish and seafood	5.8	5.8	6.1 ^C	5.7	5.8	5.9
Offers fish and seafood specials	5.5	5.3	5.7	5.3 ^E	5.5	6.0
Has staff informed about fish and seafood	5.5	4.8 ^{CD}	5.6	5.6	6.0 ^E	5.2

Base: Respondents who had bought fresh or frozen fish/seafood from a fish or general market, fish shop, fish and chip shop or supermarket in the last week weighted by household structure (n=400; N=467,000).

Q18a: You mentioned that you last bought fresh or frozen fish from a [READ OUT OUTLET FROM LAST OCCASION]. On a scale of 1 to 7, how important is [READ OUT FIRST ROTATED STATEMENT] when you buy fresh or frozen fish or seafood from that type of outlet?

Table 4.1.5c – Importance of Attribute When Selecting a Fish/Seafood for a Meal at Home (average scores)

	Total	Segment 1 (A)	Segment 2 (B)	Segment 3 (C)	Segment 4 (D)	Segment 5 (E)
Respondents	400	29	72	141	86	47
Weighted Respondents ('000)	467	37	83	158	100	57
I can be sure that the fish is correctly labelled	6.7	6.7	6.7	6.7	6.6	6.8
It is fresh rather than frozen	6.1	5.4 ^{BCD}	6.5 ^{CE}	6.0 ^{DE}	6.8 ^E	5.0
The fish is the species I want	6.1	6.4	6.1	6.1	6.1	6.1
Is a relatively low price	5.9	6.2	6.0	5.6 ^E	5.8 ^E	6.3
Has white or light coloured flesh	5.8	6.1	6.1	5.6 ^E	5.6 ^E	6.3
I can be sure that it doesn't have bones	5.7	6.1 ^D	5.6 ^E	5.7 ^D	5.1 ^E	6.2
Has a light flavour	5.6	5.6	6.0 ^{CD}	5.4 ^E	5.4 ^E	6.1
Recommended by the retailer	4.7	3.7 ^{BCE}	5.3 ^{CD}	4.6	4.5	5.1

Base: Respondents who had bought fresh or frozen fish/seafood from a fish or general market, fish shop, fish and chip shop or supermarket in the last week weighted by household structure (n=400; N=467,000).

Q18c: Now I would like you to think about when you are actually selecting a specific type of fresh (or frozen) fish for a meal at home. Again on a scale of 1 to 7, how important are each of the following factors?

Segment 1: Uninterested in Seafood – 8% of the Population

Key Descriptors:

Segment 1 represented 8% of in-home respondents (main grocery buyers).

People in this segment do not like preparing fish and were generally unwilling to learn of new ways of cooking fish so that they could eat more:

- *I like preparing fish and seafood* (66% disagreed and segment average score of 2.2 [out of 5; 1 for strongly disagree and 5 for strongly agree] compared to total sample average of 3.4); and
- *If I knew of more ways to cook fish/seafood I would eat more* (72% disagreed, 2.1 vs 3.0).

They prefer to buy familiar types of fish/seafood, and are not keen to try different varieties:

- *I like to buy familiar types of fish/seafood* (72% agreed, 3.8 vs 4.1); and
- *I like to try different types of fish/seafood* (68% disagreed, 2.2 vs 3.2).

They are generally not concerned about the quality of frozen fish and rate the taste of frozen fish better than most segments:

- *You can't be sure about the quality of frozen fish/seafood* (45% disagreed, 2.9 vs 3.7); and
- *The taste of frozen fish is as good as fresh fish* (42% agreed, 2.9 vs 2.3).

They are not worried about any environmental issues:

- *I am concerned about the impact of pollution on fish/seafood safety* (37% disagreed, 3.0 vs 4.2); and
- *I am concerned about the mercury levels in fish/seafood* (55% disagreed, 2.5 vs 3.7).

They do not eat fish for health benefits:

- *I eat fish because it is better for my health* (54% disagreed, 2.6 vs 4.0).

Fish and Seafood Consumption:

Overall, 96% of respondents in this segment had eaten fish or seafood in the last year and 65% in the last week. On average, it is estimated that households with the main grocery buyer in this segment had consumed 298.9 grams in-home in the last week.

Demographic Differences:

This segment was over represented with young families (39%) and with a household income of \$25,000 or less (37%). Half (52%) were not in the workforce.

Attitudes:

The most important factors when purchasing fresh or frozen fish from an outlet were:

- *Clean outlet/store* (average score of 6.8 out of 7 vs 6.8 total sample average);
- *Is easily accessible to me* (6.6 vs 6.2);
- *Has friendly staff working there* (6.1 vs 6.1);
- *Has a good reputation for quality fish/seafood* (5.9 vs 6.3) – but less important than other segments;
- *I frequently shop there* (5.8 vs 5.9); and
- *Has consistently low price for fish/seafood* (5.8 vs 5.8).

When selecting fish/seafood for a meal at home, the uninterested segment considered the following features to be of most importance:

- *I can be sure that the fish is correctly labelled* (6.7 out of 7 vs 6.7);
- *The fish is the species I want* (6.4 vs 6.1); and
- *Is a relatively low price* (6.2 vs 5.9).

They were more concerned than other segments that *it doesn't have bones* (6.1 vs 5.7); and less concerned that *it is fresh rather than frozen* (5.4 vs 6.1) and *is recommended by the retailer* (3.7 vs 4.7).

This segment would likely be the least responsive to marketing initiatives.

Segment 2: Environmentally Aware – 22% of the Population

Key Descriptors:

Segment 2 represented 22% of in-home respondents (main grocery buyers).

People in this segment are environmentally conscious and would most likely be prepared to pay a premium for species sourced from ecologically sustainable fisheries:

- *I am concerned about the impact of pollution on fish/seafood safety* (96% agreed and segment average of 4.7 [out of 5] compared to sample average of 4.2);
- *I am concerned about the mercury levels in fish/seafood* (82% agreed, 4.3 vs 3.7);
- *I would be prepared to pay 10% more for my fish if I could be assured that it comes from a well managed ecologically sustainable fishery* (80% agreed, 4.2 vs 3.7); and
- *There has been bad press in the media regarding fish/seafood contaminants that has lead to a reduction of my fish/seafood consumption* (52% agreed, 3.5 vs 2.7).

They focus on quality and are wary of frozen products:

- *I prefer Australian fish and seafood to imported products* (84% agreed 4.5 vs 4.3);
- *The taste of frozen fish is as good as fresh* (75% disagreed, 1.9 vs 2.3); and
- *You can't be sure about the quality of frozen fish/seafood* (83% agreed, 4.3 vs 3.7).

They prefer to buy familiar types of fish/seafood:

- *I like to buy familiar types of fish/seafood* (88% agreed, 4.3 vs 4.1).

Fish and Seafood Consumption:

Overall, 99% of respondents in this segment had eaten fish or seafood in the last year and 64% in the last week. On average, it is estimated that households with the main grocery buyer in this segment had consumed 315 grams in-home in the last week.

Demographic Differences:

This segment was over represented with those aged 40 to 59 years (47%) and 73% were aged 40 or more years.

Attitudes:

The most important factors to this segment when purchasing fresh or frozen fish from an outlet were:

- *Clean outlet/store* (average score of 6.9 out of 7 vs 6.8 sample average);
- *It sells fresh fish and seafood (i.e. not frozen)* (6.6 vs 6.2) – more important than most other segments;
- *Has a good reputation for quality fish/seafood* (6.5 vs 6.3);
- *I can be confident that fresh fish or seafood has not been frozen* (6.4 vs 6.0); and
- *Has friendly staff working there* (6.4 vs 6.1).

They were more concerned than most other segments that the outlet has: *attractively displayed fish and seafood* (6.3 vs 5.8) and *consistently low prices for fish and seafood* (6.1 vs 5.8).

When selecting fish/seafood for a meal at home, this segment considered the following features to be of most importance:

- *I can be sure that the fish is correctly labelled* (6.7 out of 7 vs 6.7); and
- *It is fresh rather than frozen* (6.5 vs 6.1).

More than any other segment they were concerned that *it is recommended by the retailer* (5.3 vs 4.7).

Marketing initiatives focusing on ecological, environmental or health issues would be attractive to this segment.

Segment 3: Not Fussy, Mainstream – 30% of the Population

Key Descriptors:

Segment 3 represented 30% of in-home respondents (main grocery buyers).

People in this segment do not have particularly strong attitudes about any aspect of fish and seafood. Rather their attitudes lie somewhere between the extremes of the other segments.

These people are also concerned about environmental issues, although their viewpoint is not as strong as segment 2:

- *I am concerned about the impact of pollution on fish/seafood safety* (81% agreed and segment average of 4.2 [out of 5] compared to sample average of 4.2); and
- *I am concerned about the mercury levels in fish/seafood* (59% agreed, 3.6 vs 3.7).

Like other segments, most like to *buy familiar types of fish/seafood* (75% agreed, 3.9 vs 4.1), although more also like to *try different types of fish/seafood* (63% agreed, 3.7 vs 3.2). They do not mind *preparing fish and seafood* (60% agreed, 3.6 vs 3.4). Freshness is not a main concern as more than any other segment, disagreed that they *don't buy packaged fish or seafood products* (74% disagreed, 2.1 vs 3.1).

Fish and Seafood Consumption:

All respondents in this segment had eaten fish or seafood in the last year and 81% in the last week. On average, it is estimated that households with the main grocery buyer in this segment had consumed 466 grams in-home in the last week.

Demographic Differences:

This segment was over represented with young families (37%), those aged 20 to 39 years (41%) and with the respondent in part time work (25%).

Attitudes:

The most important factors to this segment when purchasing fresh or frozen fish from an outlet were:

- *Clean outlet/store* (average score of 6.9 out of 7 vs 6.8 sample average) – more;
- *Has a good reputation for quality fish/seafood* (6.2 vs 6.3);
- *Is easily accessible to me* (6.2 vs 6.2);
- *It sells fresh fish and seafood (i.e. not frozen)* (6.1 vs 6.2);
- *Has friendly staff working there* (6.1 vs 6.1); and
- *I can be confident that fresh fish or seafood has not been frozen* (6.1 vs 6.0).

When selecting fish/seafood for a meal at home, this segment considered the following features to be of most importance:

- *I can be sure that the fish is correctly labelled* (6.7 out of 7 vs 6.7);
- *The fish is the species I want* (6.1 vs 6.1); and
- *It is fresh rather than frozen* (6.0 vs 6.1).

This large mainstream segment consisting of people who like fish and seafood but are not so knowledgeable or demanding in their purchasing is an attractive segment.

Segment 4: Seafood Buffs – 16% of the Population

Key Descriptors:

Seafood buffs represented 16% of in-home respondents (main grocery buyers).

People in this segment have rated quality and health issues highest:

- *The taste of frozen fish is as good as fresh* (85% disagreed and segment average of 1.6 [out of 5] vs sample average of 2.3);
- *Quality fish/seafood can be bought only from a specialist fish outlet* (89% agreed, 4.4 vs 3.6);
- *You can't be sure about the quality of frozen fish/seafood* (87% agreed, 4.3 vs 3.7);
- *I don't buy packaged fish or seafood products* (88% agreed, 4.5 vs 3.1);
- *I eat fish/seafood because it is better for my health* (90% agreed, 4.4 vs 4.0); and
- *I know of the recommended dietary intake of two servings of fish/seafood each week* (83% agreed, 4.3 vs 3.9).

More than any other segment they like preparing fish and seafood meals and while they tend to buy familiar types of fish/seafood, they were also willing to try new varieties:

- *I like preparing fish and seafood* (85% agreed, 4.3 vs 3.4);
- *I like to try different types of fish/seafood* (55% agreed, 3.5 vs 3.2).

They don't regard fish/seafood as costly, nor do they view it as being for special occasions only:

- *Fresh fish costs so much that I eat it rarely* (82% disagreed, 1.8 vs 2.8)
- *Seafood is for special occasions* (85% disagreed, 1.6 vs 2.3).

They were the least likely of all segments to switch out of the seafood category to another food if the species they wanted was not available (19% vs 37%) and more likely to consider whether a fish came from its natural habitat or was farmed when purchasing fish (63% vs 71%) – 31% would consider species habitat in the purchase decision.

Fish and Seafood Consumption:

All respondents in this segment had eaten fish or seafood in the last year and 83% in the last week. On average, it is estimated that households with the main grocery buyer in this segment had consumed 475.6 grams in-home in the last week – the highest of all segments.

Demographic Differences:

Seafood buffs were over represented with mature families (26%) and were less likely to be those from young families (22%) when compared to the total distribution. Over three quarters (76%) were aged 40 years or more (38%, 60 or more years) and one third (32%) had a household income of \$60,000 or more per annum (25% over \$80,000) – the highest of all segments.

Attitudes:

The most important factors to this segment when purchasing fresh or frozen fish from an outlet were:

- *Clean outlet/store* (6.8 out of 7 vs 6.8 sample average);
- *Has a good reputation for quality fish/seafood* (6.7 vs 6.3) – the highest of all segments;
- *Its sells fresh fish and seafood (i.e. not frozen)* (6.7 vs 6.2) – the highest of all segments;
- *I can be confident that fresh fish or seafood has not been frozen* (6.7 vs 6.0) – the highest of all segments; and
- *Offers a wide variety of fish and seafood products* (6.6 vs 6.1) – the highest of all segments.

Another three features were rated as more important by this segment than others: *I frequently shop there* (6.4 vs 5.9); *has attractively displayed fish and seafood* (6.3 vs 5.8); and *has staff informed about fish and seafood* (6.0 vs 5.5).

When selecting fish/seafood for a meal at home, this segment considered the following features to be the most important:

- *It is fresh rather than frozen* (6.8 out of 7 vs 6.1); and
- *I can be sure that fish is correctly labelled* (6.6 vs 6.7).

Segment 5: Inexperienced and Price Conscious – 13% of the population

Key Descriptors:

Segment 5 represented 13% of in-home respondents (main grocery buyers).

People in this segment are more price conscious and may be more willing to trade off quality for a lower price:

- *Fresh fish costs so much that I eat it rarely* (62% agreed and segment average of 3.5 [out of 5] compared to 2.8);
- *Seafood is for special occasion* (50% agreed, 3.4 vs 2.3); and
- *The taste of frozen fish is as good as fresh* (57% agreed, 3.3 vs 2.3).

More than any other segment, they like to buy familiar species:

- *I like to buy familiar types* (97% agreed, 4.5 vs 4.1).

People in this segment know that it is healthy to eat fish and are concerned about environmental issues:

- *I eat fish/seafood because it is better for my health* (90% agreed, 4.4 vs 4.0);
- *I am concerned about the impact of pollution on fish/seafood safety* (86% agreed, 4.2 vs 4.2); and
- *I am concerned about the mercury levels in fish/seafood* (77% agreed, 4.0 vs 3.7).

They could be encouraged to eat more by increasing their knowledge of preparation methods and allaying fears of contamination:

- *If I knew of more ways to cook fish/seafood I would eat more* (57% agreed, 3.5 vs 3.0); and
- *There has been bad press in the media regarding fish/seafood contaminants that as lead to a reduction in my fish/seafood consumption* (54% agreed, 3.4 vs 2.7).

Fish and Seafood Consumption:

All respondents in this segment had eaten fish or seafood over the last year and 78% in the last week. On average, it is estimated that households with the main grocery buyer in this segment had consumed 287.4 grams in-home in the last week – the lowest of all segments.

Demographic Differences:

This segment was over represented with singles (34%) and young families (36%) and correspondingly those aged 20 to 39 years (40%). One in four (25%) respondents were in part time employment.

Attitudes:

The most important factors to this segment when purchasing fresh or frozen fish from an outlet were:

- *Clean outlet/store* (6.6 out of 7 vs 6.8 sample average) – the lowest of all segments;
- *Has a good reputation for quality fish/seafood* (6.1 vs 6.3);
- *Is a relatively low price* (6.3 vs 5.9);
- *Has a white or light coloured flesh* (6.3 vs 5.8);
- *I can be sure that it doesn't have bones* (6.2 vs 5.7); and
- *Has a light flavour* (6.1 vs 5.6).

Similar to all other segments, when selecting fish/seafood for a meal at home, the 'inexperienced and price conscious' also rated correct labeling as the most important factor: *I can be sure that the fish is correctly labelled* (6.8 out of 7).

4.1.6 Frequency of Consumption of Different Types of Seafood

Respondents were shown the list of fish/seafood options from the accompanying box and asked how often each would be eaten. In-home respondents were asked how often they would be served at home and out-of-home respondents were asked how often they would eat each out of their own home.

Product Consumption		
Fish	Crustaceans	Molluscs
<ul style="list-style-type: none"> ▪ Fresh Fish ▪ Prepared/processed ▪ Frozen fish ▪ Canned fish ▪ Take-away fish 	<ul style="list-style-type: none"> ▪ Prawns/shrimps ▪ Lobster/crayfish ▪ Other crustaceans 	<ul style="list-style-type: none"> ▪ Mussels ▪ Oysters ▪ Scallops ▪ Squid/calamari

4.1.6.1 Frequency of Eating Different Types of Fish/Seafood In Home

In-home respondents indicated that canned fish is served more frequently than any other type of fish/seafood in the home:

- Almost two in five (38%) Melbourne households indicated that **canned fish** is served at least once a week; in just over three in four (77%) at least once a month; and in nine in ten households (89%) canned fish is served at least once a year; and
- Fresh fish is served slightly less often than canned fish – three in ten (31%) households serve **fresh fish** at least once a week; in two in three households (68%) fresh fish is served at least once a month; and similarly to canned fish, nine in ten households (91%) serve fresh fish at least once a year.

Other types of fish/seafood that are served in at least one in two Melbourne households at least once a year included:

- Fish from a takeaway outlet (79%) – in 44% of households at least once a month;
- Prawns/shrimps (68%) – in 26% of households at least once a month;
- Squid/calamari (53%) – in 18% of households at least once month;
- Fish prepared or processed (50%) – in 30% of households at least once a month;
- Frozen fish (50%) – in 28% of households at least once a month; and
- Scallops (49%) – in 12% of households at least once a month.

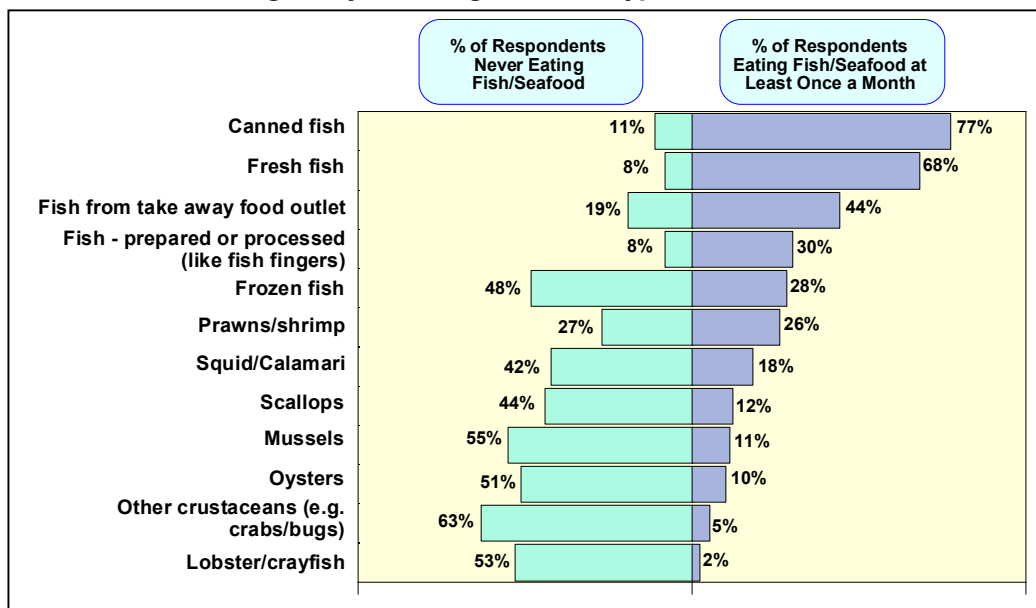
Just over three in five households (63%) **never** serve other crustaceans (e.g. crabs and bugs) in the home and close to half never serve mussels (54%), lobster/crayfish (52%) and oysters (50%).

Notable differences in the in-home consumption by characteristics of the household included:

- A higher proportion of mature family households served fresh fish at least once a month (79%) than all other household types;
- In almost half of young family households (46%) pre-prepared or processed fish is served at least once a month, with lower incidences in couple (20%) and single households (23%). The highest incidence was found in households earning \$40,000 to \$60,000 (43%);
- A higher proportion of single type households served frozen fish at least once a month (36%) than all other household types and with a higher incidence in households earning under \$60,000 (close to 30% for each income category) than over \$60,000 (close to 20%);
- Canned fish was equally as likely to be served at least once a month across all household structures (77% in total);
- Fish from a takeaway outlet was more likely to be served in-home at least once a month in young family households (56%) than all other household structures and less likely in households earning less than \$25,000 (36%); and
- A higher proportion of mature family than single households ate prawns/shrimps at least once a month (34% and 22% respectively) and the incidence was higher in households with a combined income of \$80,000 (36%) and \$25,000 to \$40,000 (30%) than under \$25,000 (16%).

In general, households earning less than \$25,000 were more likely to never serve other crustaceans in-home (76%), lobster/crayfish (66%), mussels (66%), oysters (65%), squid/calamari (59%) and scallops (54%) than all other income classifications.

Chart 4.1.6.1 – Regularity of Eating Different Types of Fish/Seafood: In-Home



Base: Respondents in households that eat fish/seafood weighted by household structure (n=993; N=1,176,000)

Q23: In general, how often would [READ EACH TYPE OF SEAFOOD ONE AT A TIME] be served at home?

Table 4.1.6.1 – Regularity of Eating Different Type of Fish/Seafood: In Home (% frequency)

	Crustaceans			Molluscs				Fish				
	Prawns/Shrimps	Lobster/Crayfish	Other Crustaceans (e.g. crab, bugs)	Mussels	Oysters	Scallops	Squid/Calamari	Fresh Fish	Fish Prepared or Processed (like fish fingers)	Frozen Fish	Canned Fish	Fish from Take Away Food Outlet
More than once a week	1	0	0	0	1	0	0	9	2	1	15	1
Once a week	3	0	0	1	1	1	1	22	7	7	23	8
AT LEAST ONCE A WEEK	4	0	0	2	1	1	2	31	9	8	38	9
Once a fortnight	7	1	1	2	2	3	4	17	8	8	22	12
Once a month	15	1	3	7	6	8	12	20	13	12	17	22
AT LEAST ONCE A MONTH	26	2	5	11	10	12	18	68	30	28	77	44
Six times a year (once every two months)	10	2	2	5	7	8	8	9	5	5	5	13
Four times a year (every three months)	8	2	2	4	6	6	6	6	4	5	3	6
Three times a year (once every four months)	5	2	2	6	4	5	6	4	2	3	2	5
Twice a year (every six months)	9	7	5	6	9	8	8	3	6	6	2	8
Once a year	9	21	12	8	7	9	7	2	3	3	1	4
AT LEAST ONCE A YEAR	68	35	28	39	43	49	53	91	50	50	89	79
Less than once a year	6	13	9	7	7	7	5	2	4	2	1	3
Never	26	52	63	54	50	43	41	7	46	47	10	18
Don't know/can't say	0	0	0	0	0	1	0	0	1	1	0	0

Base: Respondents in households that eat fish/seafood weighted by household structure (n=993; N=1,176,000)

Q23: In general, how often would [READ EACH TYPE OF SEAFOOD ONE AT A TIME] be served at home?

4.1.6.2 Frequency of Eating Different Types of Fish/Seafood Out of Home

Out of home respondents indicated that fresh fish and canned fish are eaten more frequently out-of-home than any other type of fish/seafood – these were also the main types served in the home:

- One in four (24%) out-of-home respondents indicated that they eat **fresh fish** at least once a week; just over one in two (54%) at least once a month; and four in five (84%) eat fresh fish at least once a year out-of-home; and
- Similarly to fresh fish, a core of out-of-home respondents indicated that **canned fish** is eaten at least once a week (25%) out-of-home. Half (48%) eat canned fish at least once a month and two in three (67%) indicated that they eat canned fish out of their own home at least once a year.

Other types of fish/seafood eaten by Melbournians out-of-home, at least once a year, included:

- Fish from a takeaway outlet (80%) – 41% at least once a month;
- Prawns/shrimps (69%) – 35% at least once a month;
- Squid/calamari (64%) – 21% at least once a month;
- Scallops (55%) – 13% at least once a month; and
- Oysters (51%) – 13% at least once a month.

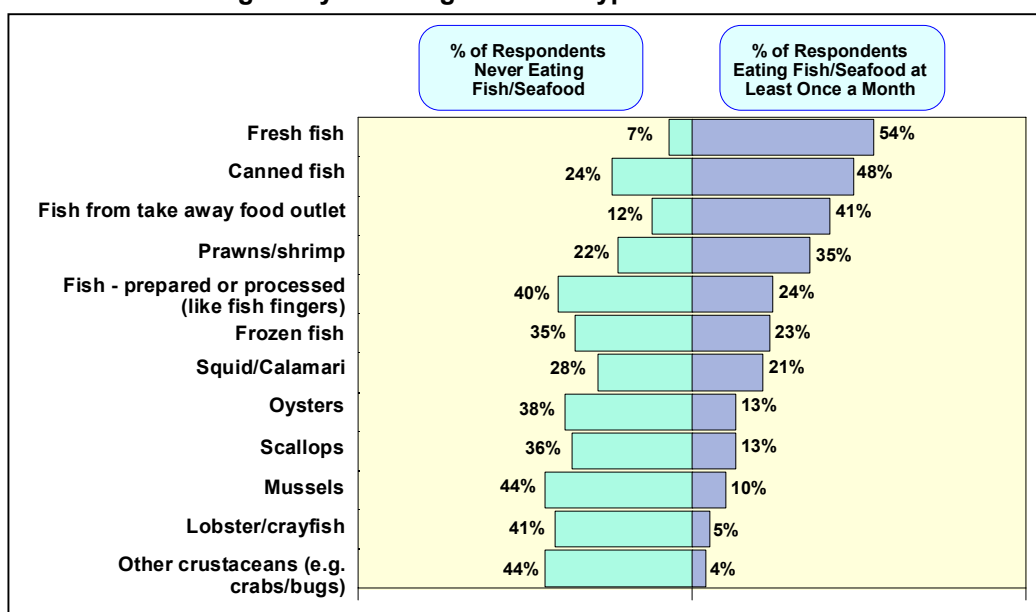
Close to two in five out-of-home respondents **never** eat mussels out of the home (44%); other crustaceans (e.g. crabs and bugs) (44%); lobster/crayfish (41%); prepared or processed fish (40%); and frozen fish (35%).

Notable differences in out-of-home consumption by respondent characteristics included:

- A higher proportion of females than males ate fresh fish (30% and 18% respectively) and canned fish (30% and 19% respectively) out-of-home at least once a week;
- Fish from a takeaway outlet was eaten more often by younger than older respondents – 50% of 15 to 19 year olds ate fish at least once a month, 48% of those 20 to 39 years, 42% of those 40 to 59 years and 27% of those 60 or more years;
- Prepared or processed fish was eaten more often by younger than older respondents - 53% of 15 to 19 year olds ate at least once year, 54% of those 20 to 39 year olds, 39% of those 40 to 59 year olds and 29% of those aged 60 or more;

- Canned fish was eaten less often out-of-home by those aged 15 to 19 years (60% at least once a year) than all other ages;
- A higher proportion of those aged 40 to 59 years than 60 or more years eat prawns/shrimps (77% and 58% respectively) and lobster/crayfish (47% and 24% respectively) out-of-home at least once a year; and
- Those over 60 years were less likely to eat squid/calamari out-of-home at least once a year (38%) than all other ages.

Chart 4.1.6.2 – Regularity of Eating Different Types of Fish/Seafood: Out-of-Home



Base: Out-of-home respondents (n=243; N=2,463,000)

Q13: Thinking about eating out of your own home, in general, how often would you personally eat (seafood listed below e.g. prawns) out of your own home? Would it be... ?

Table 4.1.6.2 – Regularity of Eating Different Type of Fish/Seafood: Out-of-Home (% Frequency)

	Crustaceans			Molluscs				Fish				
	Prawns/Shrimps	Lobster/Crayfish	Other Crustaceans (e.g. crab, bugs)	Mussels	Oysters	Scallops	Squid/Calamari	Fresh Fish	Fish Prepared or Processed (like fish fingers)	Frozen Fish	Canned Fish	Fish from Take Away Food Outlet
More than once a week	3	–	0	0	1	0	2	11	2	2	17	3
Once a week	6	0	–	1	0	1	3	13	6	4	8	4
AT LEAST ONCE A WEEK	9	0	0	2	1	2	4	24	8	6	25	7
Once a fortnight	7	2	1	1	2	3	6	13	6	6	11	11
Once a month	18	3	3	7	10	8	11	16	10	11	12	23
AT LEAST ONCE A MONTH	35	5	4	10	13	13	21	54	24	23	48	41
Six times a year (once every two months)	8	2	5	7	7	10	10	13	6	7	10	13
Four times a year (every three months)	9	1	3	5	8	9	13	5	5	6	5	9
Three times a year (once every four months)	6	2	4	6	3	7	6	7	3	3	2	5
Twice a year (every six months)	7	11	5	6	11	9	8	4	4	2	2	7
Once a year	4	17	12	5	8	7	5	1	2	6	1	6
AT LEAST ONCE A YEAR	69	38	34	38	51	55	64	84	43	46	67	80
Less than once a year	4	15	13	10	7	5	3	3	8	6	3	3
Never	22	41	44	44	38	36	28	7	40	35	24	12
Don't know/can't say	0	1	2	2	1	1	1	1	2	6	1	2
No response	4	6	7	6	4	4	5	4	7	7	4	3

Base: Out-of-home respondents (n=243, N=2,463,000)

4.1.7 Under Utilised Species

All respondents (both in-home and out-of-home) were asked a series of questions which incorporated awareness, trial, likeability and reasons for dislike of the under utilised species presented below.

Under Utilised Species

▪ Farmed Barramundi	▪ Rainbow Trout	▪ Farmed Prawns
▪ Albacore Tuna	▪ Oysters	▪ Pilchards/Sardines
▪ Mussels		

Overall, over nine in ten Melbourne residents had heard of oysters (97%), mussels (96%) and freshwater rainbow trout (87%) and of those aware of each of these species, at least seven in ten had tried them - 75% oysters, 70% mussels and 71% rainbow trout. Slightly fewer Melbourne residents had heard of and tried pilchards/sardines (73% and 59% respectively). Close to one half of respondents were aware of farmed prawns (not just prawns) and farmed barramundi and of these approximately half had tried them – farmed prawns (46% aware and 47% tried) and farmed barramundi (52% aware and 45% tried). Both awareness (18%) and trial (37% of those aware) of albacore tuna (not just tuna) was lower than any other under utilised species.

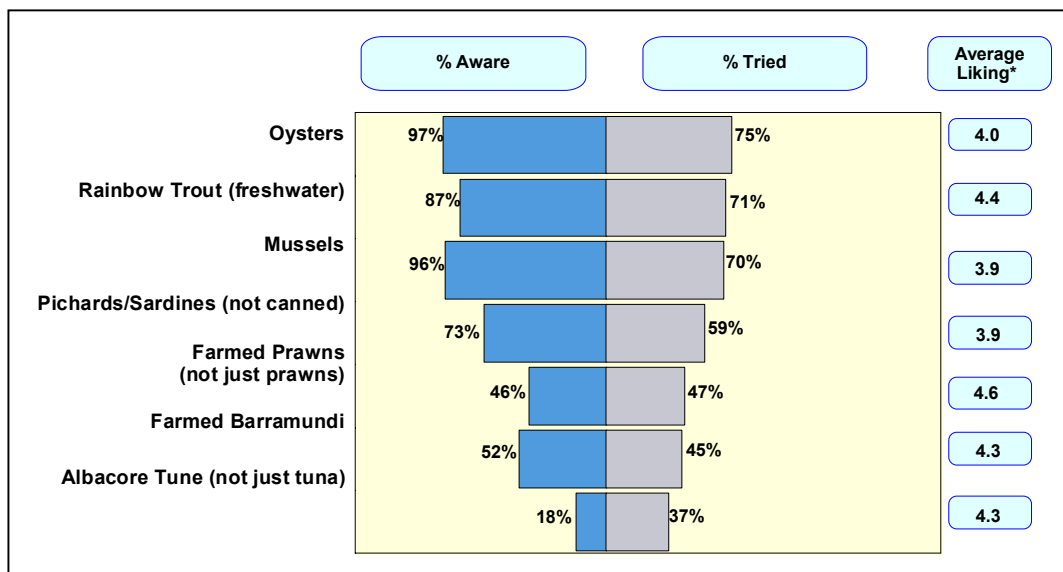
Trial was often higher among males than females: oysters (80% and 72% respectively); rainbow trout (77% and 66% respectively); mussels (75% and 66% respectively); pilchards/sardines (63% and 55% respectively); and farmed barramundi (50% and 40% respectively).

Whilst most people who tried each of the under utilised species liked what they tried (very or slightly liked), farmed prawns were the most popular (91% liked), followed by oysters (73%), mussels (71%) and pilchards/sardines (73%).

Those who disliked a particular species often cited flavour and taste as the reason for their dislike: 45% of those who disliked oysters; 41% for mussels; 31% for pilchards; 28% for sardines (22% also mentioned being too oily); and 23% for rainbow trout (22% also mentioned the flavour being too strong). Oysters and mussels were also often disliked for their consistency/texture and being slimy.

The greatest opportunity for increased sales is with those species that had low trial rates combined with high likeability, such as farmed prawns, farmed barramundi and albacore tuna.

Chart 4.1.7a – Awareness and Trial of Fish/Seafood



Base: All respondents weighted up to adult population in Melbourne (n=1,248; N=2,463,000).

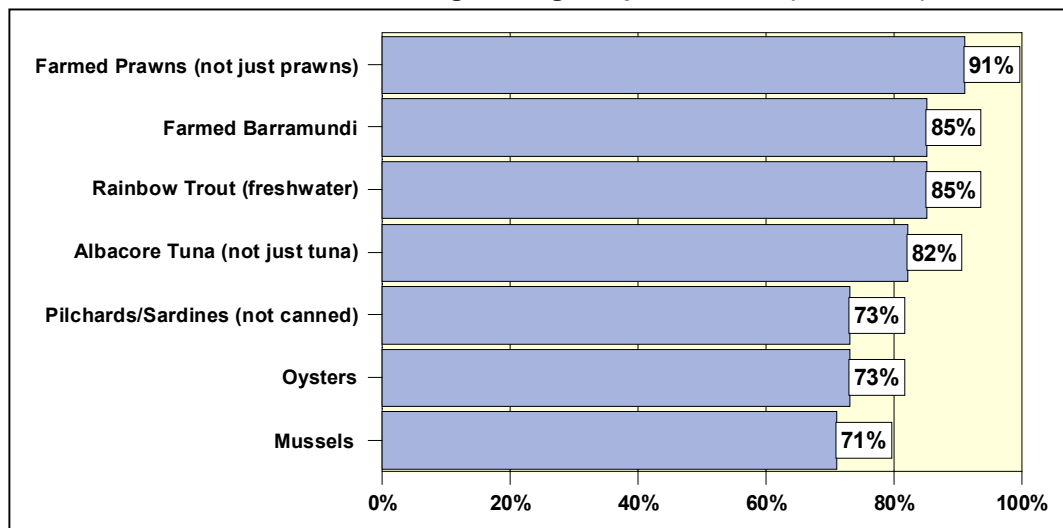
* Scale: 1 to 5, where 5 is 'Like Very Much' and 1 is 'Dislike Very Much'.

Q15a/Q26a: Have you heard of the following types of fish or seafood?

Q15b/Q26b: Have you ever tried [All of those heard of in Q15a]?

Q16/Q27: Could you indicate your own personal 'like' or 'dislike' of the fish or seafood you have tried?

Chart 4.1.7b – Percentage Liking of Species Tried (Total Like)



Base: Those respondents who have tried fish or seafood weighted to adult population in Melbourne (e.g. n=912; N=1,794,000 for oysters).

Q16/Q27: Could you indicate your own personal 'like' or 'dislike' of the fish or seafood you have tried?

Table 4.1.7 – Reasons for dislike of a species (%)

	Pilchards (not canned)	Sardines (not canned)	Albacore tuna (not just canned)	Farmed Barramundi	Farmed Prawns	Rainbow Trout	Mussels	Oysters
Respondents	40	74	4*	19*	9*	62	184	202
Weighted Respondents ('000)	82	141	11	45	18	128	348	372
	%	%	%	%	%	%	%	%
Flavour/taste/don't like the taste	31	28	–	23	7	23	41	45
Muddy/earth taste	–	–	–	–	–	14	0	–
Tastes like seawater	–	–	–	–	–	–	1	3
Too salty	15	12	–	–	–	–	6	4
Too bland/lack of flavour/tasteless	–	–	16	25	32	20	3	5
Flavour too strong/over powering/rich	7	18	34	–	–	22	6	3
Too fishy	8	9	–	–	7	5	5	5
Too oily	13	22	–	–	–	3	–	–
Farmed/flavour not as good	–	–	37	28	24	4	–	–
Freshwater/prefer saltwater fish	–	–	–	–	–	2	–	–
The smell/awful/horrible smell	14	13	12	–	–	9	8	4
Consistency/Texture	14	6	–	3	7	4	23	22
Too slimy/slimy texture	5	6	–	–	–	–	20	38
Soft	–	1	–	–	–	2	–	1
Too chewy/leathery/tough/rubbery	–	–	–	–	–	–	10	3
Gritty	–	1	–	–	–	1	3	3
Too many bones	10	7	–	–	21	13	–	–
Eat them raw	–	–	–	–	–	–	0	5
Appearance/the look	7	4	–	3	–	1	10	12
Too small	11	5	–	10	7	–	–	–
Don't know how to cook it/cooked it badly	2	9	–	–	–	2	0	–
Allergic reaction/made me ill	–	2	–	–	–	3	5	7
A bait fish/use for bait/not for eating	4	3	–	–	–	–	–	–
No particular reason	12	6	–	25	9	1	7	2
Other mentions	3	1	–	6	21	7	5	3

* Caution low sample base.

Base: Those respondents who disliked at least one type of fish in Q16 weighted up to adult population.

Q17: What did you dislike about [FOR EACH TYPE DISLIKED].

4.1.8 Attitudes Towards Fish/Seafood

All respondents were asked to rate a series of attitude statements about fish and seafood using a five point scale from 1 *strongly disagree* to 5 *strongly agree* (3 was *neither agree nor disagree*). Thirteen statements were asked of both in-home and out-of-home respondents, however, five were asked exclusively of in-home respondents and three of out-of-home respondents (these are indicated in the accompanying chart).

In general, Melbournians have concerns about the impact of pollution on seafood safety. They like to buy familiar species of fish/seafood and have a preference for Australian to imported products. They have doubts about the quality of frozen fish and don't believe that the taste of frozen fish is as good as fresh. The majority of Melburnians eat fish/seafood for the health benefits, are aware of the recommended weekly dietary intake and consider fish to be good for a light meal. More specifically, **over three in five respondents agreed** (either *strongly* or *somewhat*) that:

- *I am concerned about the impact of pollution on fish/seafood safety* (78% agreed, with an average rating of 4.2 out of 5);
- *I like to buy familiar types of fish/seafood* (77%, 4.0);
- *I prefer Australian fish and seafood to imported products* (72%, 4.2);
- *I eat fish/seafood because it is better for my health* (70%, 3.9);
- *I know of the recommended dietary intake of two servings of fish/seafood each week* (64%, 3.8);
- *You can't be sure about the quality of frozen fish/seafood* (62%, 3.7);
- *The taste of frozen fish is as good as fresh fish* (63% disagree, 2.3); and
- *Fish/seafood is good for a light meal* (62%, 3.7).

There are themes contained within the statements and the **level of agreement** to each of these is summarised below. In cases where there is a high level of disagreement, this has been noted.

Species

Familiarity is important and there is some resistance to trying different species.

- *I like to buy familiar types of fish/seafood (77% agree);*
- *I prefer Australian fish to imported products (72% agree); and*
- *I like to try different types of fish/seafood (49% agree – 29% disagree).*

Fresh / Frozen / Packaed

There are doubts about the quality and taste of frozen fish and whether fresh fish has been frozen. Melbournians were divided in opinion as to buying packaged fish or seafood products.

- *You can't be sure about the quality of frozen fish/seafood (62% agree);*
- *I'm not always sure that fresh fish I buy hasn't been frozen (58% agree);*
- *I don't buy packaged fish or seafood products (43% agree); and*
- *The taste of frozen fish is as good as fresh (19% agree – 63% disagree).*

Environment and Food Safety

Environmental impacts are of concern and for some has lead to a reduction in their fish/seafood consumption. Over half would be prepared to pay a price premium for fish from an ecologically sustainable fishery.

- *I am concerned about the impact of pollution on fish/seafood safety (78% agree);*
- *I am concerned about the mercury levels in fish/seafood (59% agree);*
- *I would be prepared to pay 10% more for my fish if I could be assured that it comes from a well managed ecologically sustainable fishery (58% agree);*
- *Fish is less likely to be contaminated than meat and chicken (24% agree – 34% disagree and 13% don't know); and*
- *There has been bad press media regarding fish/seafood contaminants that has lead to a reduction of my fish/seafood consumption (28% agree – 46% disagree).*

Health

The health benefits and awareness of the recommended weekly dietary intake of fish are well known by Melbournians. Fish and seafood are also seen as a light meal choice.

- *I eat fish/seafood because it is better for my health (70%);*
- *I know of the recommended dietary intake of two servings of fish/seafood each week (64% agree);*
- *Fish/seafood is good for a light meal (62% agree).*

Price

The cost of fresh fish constrains consumption for close to one third of Melbournians, suggesting that further increases are likely to see a decline in demand.

- *I would eat the same amount of fish/seafood no matter what the price was (40% agree – 35% disagree);*
- *Fresh fish costs so much that I eat it rarely (34% agree – 45% disagree);*
- *Seafood is for special occasions (24% agree – 60% disagree).*

Distribution

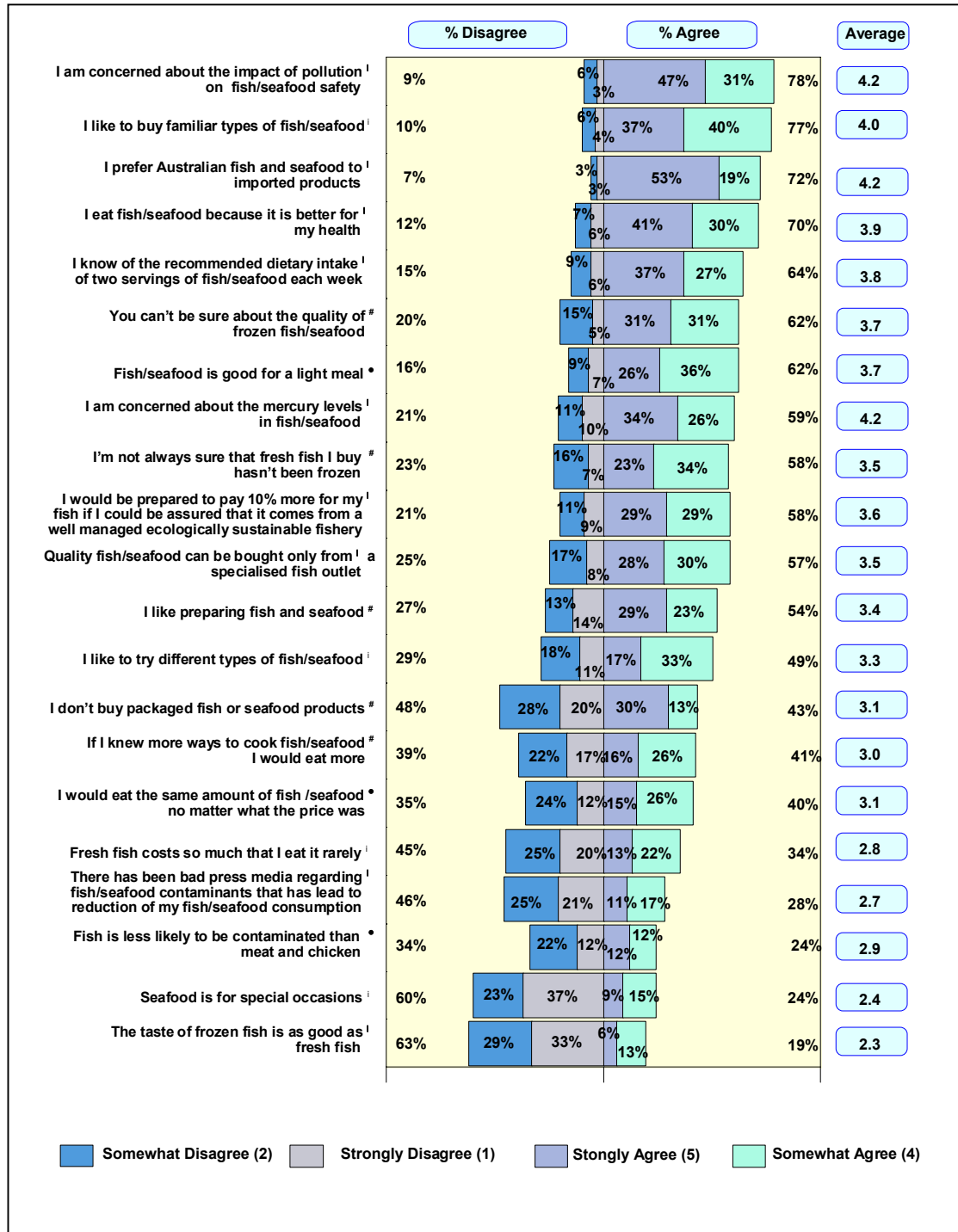
- *Quality fish/seafood can be bought only from a specialised fish outlet (57% agree).*

Preparation

More meal preparers are comfortable cooking fish and seafood than are not, although increased awareness of preparation methods is likely to have a positive impact on consumption levels.

- *I like preparing fish and seafood (54% agree); and*
- *If I knew of more ways to cook fish/seafood I would eat more (41% agree).*

Chart 4.1.8 – Statement Agreement Regarding Fish/Seafood



* In-home and Out-of-home combined data

In-home data only

● Out-of-home data only

Base: All respondents weighted up to adult population in Melbourne (n=1248, N=2,463,000).

Q14 (out-of-home): Listed below are some statements that various people have made about fish and seafood eaten outside the home. Circle if you agree, disagree or neither agree or disagree with this statement.

Q24b (in-home): I am going to read out some statements that various people have made about seafood (fish or other seafood). As I read them out, I'd like you to tell me whether you agree, disagree or neither agree nor disagree with the statement.

Many attitudes held about fish and seafood in 1991 are similar in 2005. However, for some, the strength of agreement or disagreement has changed. The most strongly held attitudes in 1991, held by at least two in three Melbournians, were:

- *I am concerned about the impact of pollution on fish/seafood safety* (78% agreed, with an average rating of 4.4 out of 5) – similar in 2005;
- *You can't be sure about the quality of frozen fish/seafood* (75%, 4.1) – 13% decline in agreement from 1991;
- *The taste of frozen fish is as good as fresh fish* (71% disagree, 2.0) – 8% decline in disagreement and 13% increase in agreement since 1991;
- *I like to buy familiar types of fish/seafood* (70%, 3.9) – similar in 2005;
- *Fish/seafood is good for a light meal* (69%, 4.0) – similar in 2005;
- *I'm not always sure that fresh fish I buy hasn't been frozen* (68%, 3.8) – 10% decline in agreement from 1991.

In general, while there are still concerns about the quality and taste of frozen fish and the labelling of fresh fish when it has been frozen, the strength of these attitudes is a little weaker in 2005 than 1991. Two attitudes have become stronger since 1991: *I eat fish because it is better for my health* (50% in 1991 to 70% agreement in 2005); and *I prefer Australian fish and seafood to imported products* (59% in 1991 to 72% in 2005).

Table 4.1.8 – Agreement/Disagreement (%) and Average Score Regarding Fish/Seafood

		1991			2005		
		Total Disagree	Total Agree	Average	Total Disagree	Total Agree	Average
I am concerned about the impact of pollution on fish/seafood safety	*	4	78	4.4	9	78	4.2
I like to buy familiar types of fish/seafood	*	9	70	3.9	10	77	4.0
I prefer Australian fish to imported products	*	4	59	4.0	7	72	4.2
I eat fish because it is better for my health	*	16	50	3.5	12	70	3.9
I know of the recommended dietary intake of two servings of fish/seafood each week	*	NA	NA	NA	15	64	3.8
You can't be sure about the quality of frozen fish/seafood	#	12	75	4.1	20	62	3.7
Fish/seafood is good for a light meal	●	11	69	4.0	16	62	3.7
I am concerned about the mercury levels in fish/seafood	*	NA	NA	NA	21	59	4.2
I'm not always sure that fresh fish I buy hasn't been frozen	#	17	68	3.8	23	58	3.5
I would be prepared to pay 10% more for my fish if I could be assured that it comes from a well managed ecologically sustainable fishery	*	NA	NA	NA	21	58	3.6
Quality fish/seafood can only be bought from specialist fish outlet	*	19	50	3.5	25	57	3.5
I like preparing fish/seafood	#	33	49	3.2	27	54	3.4
I like to try different types of fish/seafood	*	36	42	3.0	29	49	3.3
I don't buy packaged fish or seafood products	#	NA	NA	NA	48	43	3.1
If I knew of more ways to cook fish/seafood I would eat more	#	48	32	2.8	39	41	3.0
I would eat the same amount of fish/seafood no matter what the price was	●	31	32	3.0	35	40	3.1
Fresh fish costs so much I eat it rarely	*	43	32	2.8	45	34	2.8
There has been bad press media regarding fish/seafood contaminants that has lead to a reduction of my fish/seafood consumption	*	NA	NA	NA	46	28	2.7
Fish is less likely to be contaminated than meat and chicken	●	NA	NA	NA	34	24	2.9
Seafood is for special occasions	*	61	15	2.2	60	24	2.4
The taste of frozen fish is as good as fresh fish	*	71	6	2.0	63	19	2.3

* In-home and Out-of-home combined data

In-home data only

● Out-of-home data only

Base: All respondents weighted up to adult population in Melbourne (n=1248, N=2,463,000).

Q14 (out-of-home): Listed below are some statements that various people have made about fish and seafood eaten outside the home. Circle if you agree, disagree or neither agree or disagree with this statement.

Q24b (in-home): I am going to read out some statements that various people have made about seafood (fish or other seafood). As I read them out, I'd like you to tell me whether you agree, disagree or neither agree nor disagree with the statement.

Strongly agree is scored as 5, strongly disagree is 1

4.1.9 Recreational Fishing

4.1.9.1 Incidence of Recreational Fishing and Weight Caught

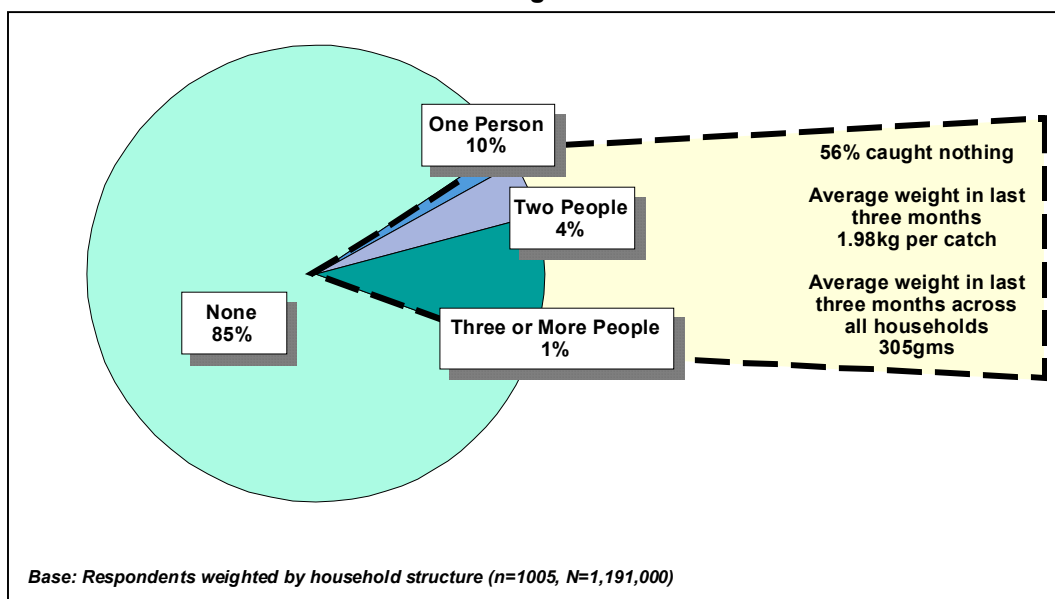
Over the three months prior to interview, 15% of in-home respondents reported that someone from their household had been fishing, on at least one occasion, for recreation or leisure. In one in ten households (10%) only one household member had been fishing; in 4%, two household members had been fishing; and in 1% of households, three or more people had been fishing at least once in the last three months:

- Recreational fishing was less common in single (9%) and couple (14%) households when compared to young (20%) and mature family (20%) households;
- Households with an income under \$25,000pa were also less likely to have gone fishing in the last three months (9%) when compared to higher income households – one in five households earning over \$40,000pa; and
- There were no notable seasonal differences in recreational fishing incidence: Winter 2004 (13%), Spring 2004 (16%), Summer 2005 (16%) and Autumn 2005 (17%).

Of the 15% of fishing households, just over half (56%) had not caught anything. The average estimated total weight of fish caught in the three months preceding the survey period was 1.98 kilograms per fishing household (4.5 kilograms per fishing household that caught a fish). Taking into consideration non-fishing households, the average catch was 305 grams per household. The average catch weight per household was greatest in Spring 2004 at 483.5 grams, followed by Summer 2005 at 313.9 grams, Autumn 2005 at 251.3 grams and lastly, Winter 2005 at 160.4 grams.

The 1991 study found that 21% of respondents reported that a household member had been fishing for recreation or pleasure, with an average catch of 1.97kg per fishing household but with a 296 gm average taking account of non fishing households. The percentage of fishing households has decreased since then but there is no significant change in the weight of the average catch.

Chart 4.1.9.1 – Number of Household Members Who Had Been Fishing in Last Three Months



Base: Respondents weighted by household structure (n=1,005; N=1,191,000).

Q30a/b: Over the last three months how many members of your household have been fishing, on at least one trip, for recreation or leisure? Over the last three months approximately what weight of fish was caught by all members of this household and brought home to eat?

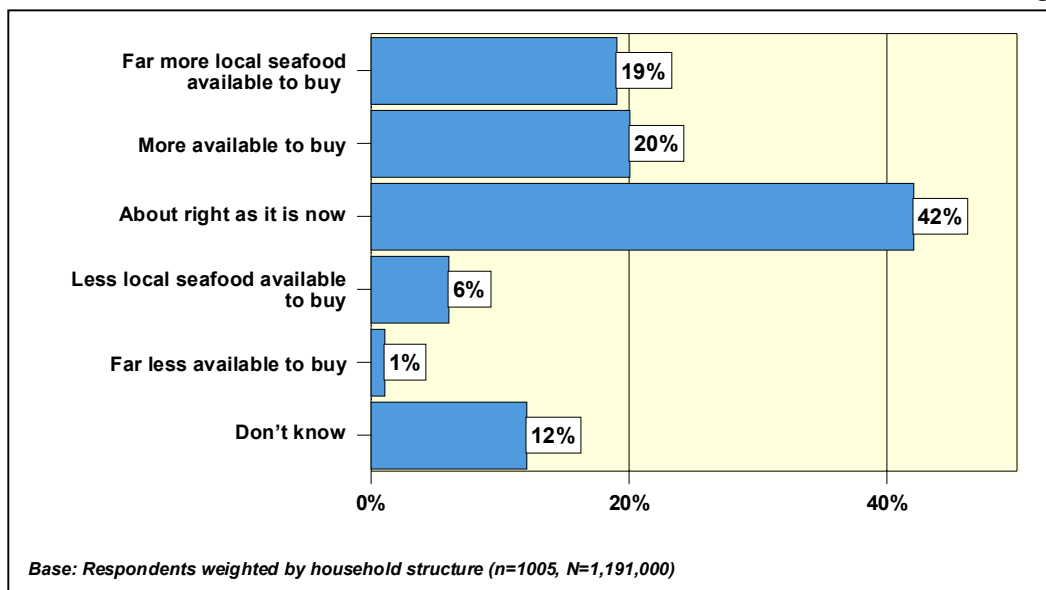
4.1.9.2 Attitude Towards Balance of Recreational and Commercial Fishing

When in-home respondents were asked about their attitude towards the available supply of seafood from commercial fishers, two in five (42%) felt that it was *about right as it is now*. Of those remaining, a higher proportion would like to see more fresh local seafood available than less seafood to allow for an increase in recreational fishing. More specifically:

- Two in five (39%) would like more fresh local seafood available to buy – 19% *far more* and 20% *more*; and
- Less than one in ten (7%) would prefer less local seafood available to allow for an increase in recreational fishing – 1% *far less* and 6% *less*.

One in eight in-home respondents (12%) *did not know*.

A lower proportion of those under than over 60 years considered the balance to be *about right as it is now* (40%, 20 to 39 years and 39%, 40 to 59 years compared to 51%, 60 or more years). Conversely a higher proportion under 60 years felt that there should be *more available to buy* (40%, 20 to 39 years and 41%, 40 to 59 years compared to 34%, 60 or more years). Slightly more males than females would prefer less local seafood available to allow for an increase in recreational fishing (11% and 5% respectively).

Chart 4.1.9.2 – Attitude Towards Balance of Recreational and Commercial Fishing

Base: Respondents weighted by household structure (n=1,005; N=1,191,000).

Q. 31: Would you like to see more fresh local seafood available to buy or would you prefer to see less local seafood available to allow for an increase in recreational fishing?

In contrast, Perth residents in 1999 were far more interested in getting more fish available for commercial fishing and consumption than Melbourne residents. More specifically, 76% would like more fresh local seafood to buy - 33% *far more* and 43% *more*, 6% felt it was *about right as it is now*, 7% would prefer less local seafood available – 1% and 6% *far less*. One in eight Perth residents (13%) *did not know*.

4.2 In Home Fish/Seafood Consumption

4.2.1 Preferred Meal Selection

In-home respondents were each assigned a meal occasion appropriate to their household structure from one of the following:

- Evening meal by self;
- Household evening meal;
- Weekend household lunch;
- Entertaining entrée;
- Entertaining main meal; and
- Children's evening meal.

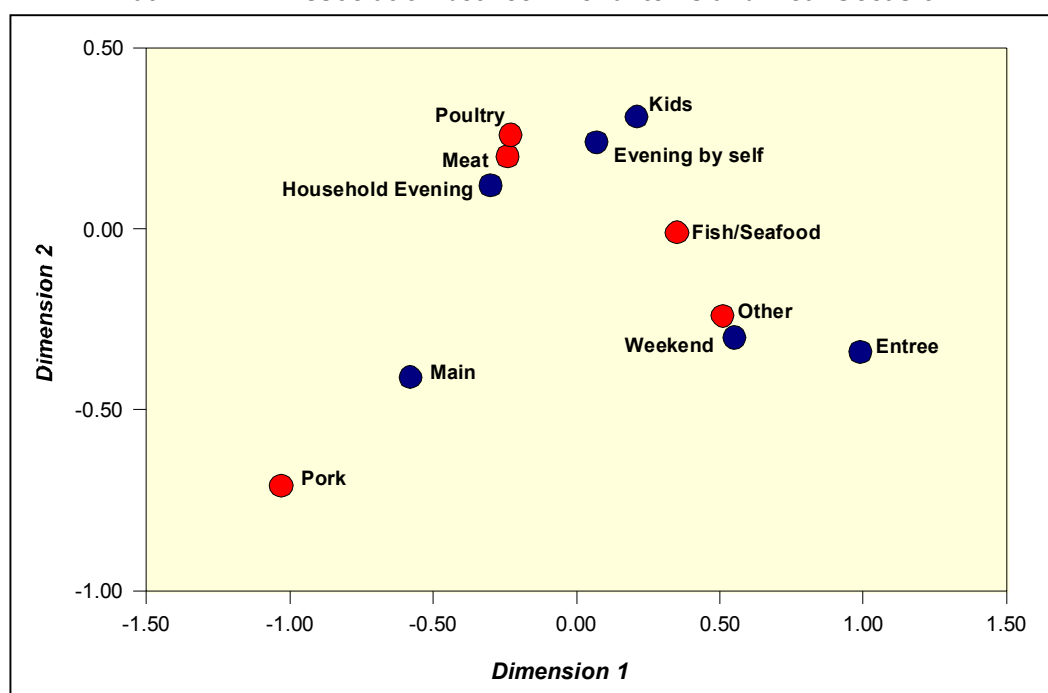
From the list of 29 possible meals, respondents were asked to select up to six meals that they would be most likely to consider preparing for their assigned meal occasion.

List Provided for Meal Selection

Meat	Fish/Seafood
<ul style="list-style-type: none"> ▪ Sausages ▪ Lamb chops ▪ Steak ▪ Mince/rissoles ▪ Casserole or curry ▪ Lamb for roast ▪ Beef stir fry ▪ Veal 	<ul style="list-style-type: none"> ▪ Canned fish ▪ Whole fish ▪ Fish fillet ▪ Fish fingers ▪ Salmon (not canned) ▪ Prawns (not canned) ▪ Scallops ▪ Oysters ▪ Mussels
Pork	Other
<ul style="list-style-type: none"> ▪ Pork chops ▪ Pork for roast ▪ Pork fillet 	<ul style="list-style-type: none"> ▪ Pasta dish ▪ Vegetarian ▪ Sandwich/bread ▪ Pies/pasties ▪ Canned vegetable/meat ▪ Soup
Poultry	
<ul style="list-style-type: none"> ▪ Whole chicken ▪ Chicken fillet/piece ▪ Chicken schnitzel/parmigana 	

The accompanying matrix depicts, in a two dimensional space, the association between the menu items and each meal occasion. The underlying structure of responses indicates that **fish/seafood was most closely associated with an entertaining entrée and to a lesser extent the household weekend lunch**. Other dishes (such as, sandwiches, pasta, soup and pies/pasties) were in absolute and relative terms, closely associated with the household weekend lunch and also an entertaining entrée. Meat and poultry were relatively more strongly associated with an evening meal alone and the household evening meal. And pork, in relative terms had the strongest association with an entertaining main meal, although in absolute terms, meat and poultry were nominated more often. For a children's evening meal, meat and poultry were more often selected.

Matrix 4.2.1 – Association between Menu Items and Meal Occasion



The table below shows the proportion of respondents who selected a fish or seafood meal option from the list provided for each of the different meal occasions. Looking at each type shows where they are positioned in the mind of the main grocery buyer:

- **Canned fish** was most often selected for an *evening meal by self* (25%) and a *weekend household lunch* (25%). That is, one in four respondents who were asked to select up to six meal options for an *evening meal by self*, nominated canned fish among their choices;
- **Whole fish** was most likely to be selected for a *household evening meal* (19%) followed by an *entertaining main meal* (16%);

- **Fish fillet** was nominated as a meal option by two in five respondents for an *evening meal by self* (40%) and a *household evening meal* (36%);
- **Fish fingers** were most often selected for a *children's evening meal* (27%);
- **Seafood** was more often selected for an *entertaining entrée* than any other meal occasion: 55% chose prawns; 23% oysters; 20% scallops; versus 16% salmon (not canned):
 - One in ten main grocery buyers would consider prawns (11%) or salmon (10%) for an *entertaining main meal*; and
 - Scallops, mussels and oysters were infrequently selected for any meal occasion with the exception of an *entertaining entrée*.

Table 4.2.1a – Fish/Seafood Selection by Meal Type (%)

	Canned Fish	Whole Fish	Fish Fillet	Fish Fingers	Salmon (not canned)	Prawns (not canned)	Scallops	Oysters	Mussels
Evening meal by self	25	12	40	5	5	5	3	3	2
Household evening meal	13	19	36	7	7	6	2	–	–
Weekend household lunch	25	7	15	10	4	6	0	3	–
Entertaining entrée	7	5	10	4	16	55	20	23	15
Entertaining main	4	16	23	1	10	11	3	4	2
Children's evening meal	15	2	24	27	1	2	1	–	–

Base: Meal occasions prepared at least once a year and appropriate for household structure weighted by household structure.

Q3: Which of the following meals would you be most likely to consider preparing for [READ OUT MEAL OCCASION]. You can select as many as six?

When looking at all 29 meal choices, the most popular for each meal occasion were as follows:

- For an **evening meal by self**, more respondents nominated a chicken fillet/piece (67%) than any other meal choice. Close to one half selected pasta (55%) and steak (45%). A fish fillet was the fourth ranked choice being selected by two in five in-home respondents (40%);
- For a **household evening meal**, the most frequently chosen options were the same as for an evening meal by self: chicken fillet/pieces (61%); steak (49%); and pasta dish (45%). Just over one in three (36%) chose a fish fillet, similar to sausages (35%) and beef stir fry (33%), and was higher than the combined total for pork (31%);

- Sandwiches/bread was the most frequently chosen meal for a **weekend household lunch** 61% of respondents. Almost one half (48%) would consider a pasta dish and two in five (42%) soup. Of fish choices, canned fish was most likely to be considered by one in four respondents (25%), which is similar to sausages (26%) and chicken fillet/pieces (24%);
- Almost two in three (63%) main grocery buyers would consider soup for an **entertaining entrée** and close to half (55%) nominated prawns among the 29 meal choices. These were followed at a distance by a pasta dish (33%) and chicken fillet/pieces (32%);
- For an **entertaining main meal**, lamb for roast (57%) was selected more than any other meal option. A pasta dish (46%), whole chicken (44%), chicken fillet/pieces (40%) were each selected by a similar proportion of respondents. A fish fillet was the fish/seafood option most often chosen for an entertaining main meal by one in four (23%) main grocery buyers; and
- For a **children's evening meal**, two in three (64%) main grocery buyers chose a pasta dish. Close to half would consider sausages (53%), chicken fillet/pieces (50%) and mince/rissoles (47%) for a child's meal. Fish/seafood options ranked well behind, with fish fingers and a fish fillet being considered by around one in four (27% and 24% respectively).

Table 4.2.1b – Food Consumption by Meal Type (%)

	Evening Meal by Self	Household Evening Meal	Weekend Household Meal: Lunch	Entertaining: Entrée	Entertaining: Main	Children's Evening Meal
Respondents	215	254	149	95	165	127
Weighted Respondents ('000)	315	280	164	115	196	122
MEAT						
Sausages	30	35	26	7	13	53
Lamb chops	32	42	13	4	12	23
Steak	45	49	22	5	35	17
Mince/rissoles	23	29	13	13	11	47
Casserole/curry	22	30	14	7	31	27
Lamb for roast	16	29	15	3	57	25
Beef stir fry	27	33	15	15	21	23
Veal	2	6	–	3	5	2
PORK						
Pork chops	10	21	10	–	7	6
Pork for roast	2	7	3	2	35	5
Pork fillet	8	6	–	2	6	1
POULTRY						
Whole chicken	10	26	20	7	44	18
Chicken fillet/piece	67	61	24	32	40	50
Chicken schnitzel/parmigana	13	16	10	3	13	28
OTHER						
Pasta dish	55	45	48	33	46	64
Vegetarian	18	10	17	25	15	10
Sandwich/bread	20	6	61	25	2	26
Pies/pasties	12	5	29	14	4	19
Canned vegetables/meat	3	2	2	2	–	6
Soup	28	18	42	63	17	27

Base: Meal occasions prepared at least once a year and appropriate for household structure weighted by household structure.

Q3: Which of the following meals would you be most likely to consider preparing for [READ OUT MEAL OCCASION]. You can select as many as six?

The same question was asked in 1991, although with a list of 26 possible meals – compared to 29 in 2005. Smoked cod was included in 1991 (not in 2005) but pork fillet, chicken schnitzel/parmigiana, oysters and mussels were not in 1991. Respondents could select up to six meal options for the meal occasion. The table below shows the proportion of respondents who selected a fish or seafood meal option for each of the different meal occasions. The results are not directly comparable because of the changes in the meal options, however, changes in the pattern of responses suggest shifts in the positioning of fish/seafood in the mind of the main grocery buyer:

- Canned fish and fish fillets were more likely to be selected for *an evening meal by self* in 2005 compared to 1991;
- A slightly higher proportion of respondents selected most fish/seafood meal options in 2005 than 1991 for *a household evening meal* (fish fillet highest with 36%) and *weekend household lunch* (canned fish highest with 25%);
- *For an entertaining entrée*, canned fish, whole fish and fish fillets were selected less often in 2005 than 1991, however, prawns were more likely to be chosen; and
- Fish fingers have become a more popular choice for *a children's evening meal* (27% in 2005), with a small decline in whole fish (now 24%).

The likelihood of salmon and prawns now being selected for a number of meal occasions has increased. Salmon was equally as likely to be selected for an entertaining entrée in 1991 and 2005, although it was chosen more often for an entertaining main meal in 2005 than 1991. Prawns ranked second behind soup for an entertaining entrée in 1991 and 2005, although a higher proportion selected prawns in 2005 (up ten points to 55%).

**Table 4.2.1c – Fish/Seafood Selection by Meal Type (%)
1991 and 2005**

	Canned Fish	Whole Fish	Fish Fillet	Fish Fingers	Salmon (not canned)	Prawns (not canned)	Scallops	Oysters	Mussels
Evening meal by self - 1991	18	14	27	6	1	3	1	NA	NA
2005	25	12	40	5	5	5	3	3	2
Household evening meal - 1991	13	15	34	2	2	2	1	NA	NA
2005	13	19	36	7	7	6	2	–	–
Weekend household lunch - 1991	19	10	14	4	0	2	1	NA	NA
2005	25	7	15	10	4	6	0	3	–
Entertaining entrée - 1991	18	9	18	2	18	45	24	NA	NA
2005	7	5	10	4	16	55	20	23	15
Entertaining main - 1991	5	18	22	0	5	14	4	NA	NA
2005	4	16	23	1	10	11	3	4	2
Children's evening meal - 1991	13	13	27	14	1	6	0	NA	NA
2005	15	2	24	27	1	2	1	–	–

Base: Meal occasions prepared at least once a year and appropriate for household structure weighted by household structure.

Q3: Which of the following meals would you be most likely to consider preparing for [READ OUT MEAL OCCASION]. You can select as many as six?

4.2.2 Attitude Statements

All in-home respondents were assigned one of six meal occasions appropriate to their household structure and given eight meal choices as shown below. Respondents were then read eleven statements and asked to which meal by occasion, if any, each statement applied. They could nominate none, one or as many as they liked. The results for each meal occasion are presented in a correspondence matrix that shows, in a two dimensional space, the level of association between the statements and the meal choices. Each matrix is supported by a table detailing the proportion of respondents who associated a particular statement with a meal choice – none and don't know are also indicated.

List Provided for Meal Selection

Evening Meal by Self <ul style="list-style-type: none"> ▪ Canned fish ▪ Pasta dish ▪ Sausages ▪ Lamb chops ▪ Fish fillet ▪ Fish fingers ▪ Vegetarian ▪ Pie/pastie 	Household Evening Meal <ul style="list-style-type: none"> ▪ Canned fish ▪ Pasta dish ▪ Sausages ▪ Steak ▪ Pork chops ▪ Fish fillet ▪ Whole chicken ▪ Lamb roast
Weekend Household Lunch <ul style="list-style-type: none"> ▪ Canned fish ▪ Pasta dish ▪ Steak ▪ Whole fish ▪ Whole chicken ▪ Lamb roast ▪ Pie/pastie ▪ Prawns (not canned) 	Children's Evening Meal <ul style="list-style-type: none"> ▪ Canned fish ▪ Pasta dish ▪ Sausages ▪ Mince/rissoles ▪ Fish fillet ▪ Fish fingers ▪ Pie/pastie ▪ Canned vegetables/meat
Entertaining – Entrée <ul style="list-style-type: none"> ▪ Pasta dish ▪ Oyster/mussels ▪ Vegetarian ▪ Beef short cut pieces ▪ Salmon (not canned) ▪ Prawns (not canned) ▪ Scallops ▪ Soup 	Entertaining – Main <ul style="list-style-type: none"> ▪ Pasta dish ▪ Steak ▪ Whole fish ▪ Fish fillet ▪ Chicken fillet/pieces ▪ Pork for roast ▪ Veal ▪ Prawns (not canned)

Evening Meal by Self

For an evening meal by oneself, **fish fillets, a pasta dish and vegetarian** were perceived **similarly**. Their strongest associations were to *is a healthy meal*, *is popular with people who will be eating the meal*, *I don't have the knowledge to buy confidently*, *I need more information about its cooking*; and *It isn't easy to prepare*, these three meal choices were more often selected than any other.

Canned fish lies in the middle of the two statements with which it is most strongly associated: *is not a filling meal* and *is a healthy meal*. **Fish fingers** were seen as *not a filling meal* and *has a taste I dislike* and **pies and pasties** were perceived similarly although were more often associated with *I can cook it in the microwave*. More than any other meal choice, **lamb chops** were regarded as *too expensive for the meal* and *there is wastage as a lot of what you buy can't be eaten* (these two statements draw lamb chops away from other choices).

However, they are still seen as *popular with the people who will be eating the meal*. At least four in five respondents associated *is readily available to buy* with each meal choice, although in absolute terms this statement was highest for sausages and canned fish.

Matrix 4.2.2a – Association Between Meal Choice and Attitudes

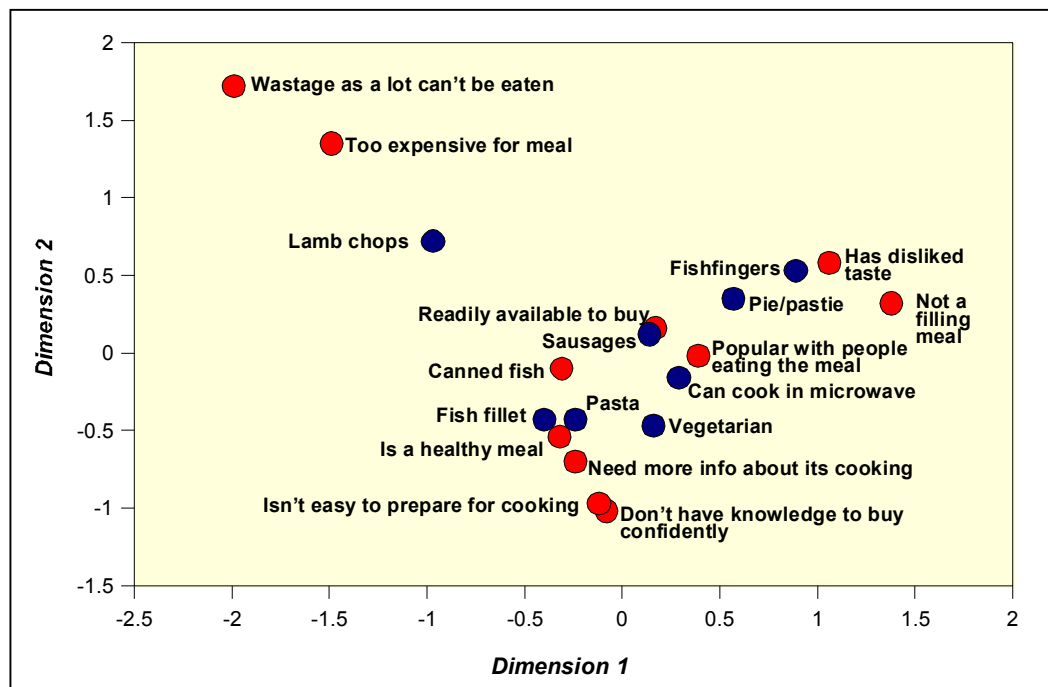


Table 4.2.2a – Evening Meal by Self (%)

	Canned Fish	Fish Fillet	Fish Fingers	Pasta Dish	Sausages	Lamb Chops	Vegetarian	Pie/Pastie	None	Don't Know
Is too expensive for the meal	1	10	2	0	2	19	2	4	65	5
I need more info about its cooking	3	4	0	3	1	3	6	3	79	5
Is readily available to buy	91	85	87	86	90	88	81	85	1	–
I don't have the knowledge to buy it confidently	1	4	1	3	3	1	5	1	80	5
It isn't easy to prepare for cooking	1	5	1	4	1	2	8	3	75	5
Is not a filling meal	17	3	20	3	2	1	14	14	45	7
Has a taste that is disliked	10	4	20	3	10	4	11	12	45	7
There is wastage as a lot of what you buy can't be eaten	1	1	–	4	1	17	2	1	65	8
I can cook it in the microwave	9	13	11	19	8	9	16	26	51	10
Is a healthy meal	55	69	20	57	24	48	61	16	2	2
Is popular with the people who will be eating the meal	40	61	26	65	36	58	37	32	1	3

Base: Meal occasion (evening meal by self) prepared at least once a year weighted by household structure (n=216; N=316,000).

Q4: I'm going to read out a number of statements and would like you to tell me to which, if any, each statement applies. You may nominate none, one or as many as you like. There are no right or wrong answers, we are just interested in your opinion.

Household Evening Meal

For a household evening meal, **fish fillets** were regarded as *a healthy meal* more than any other meal choice. In relative terms, fish fillets were also associated with *I don't have the knowledge to buy it confidently* and *I need more information about its cooking*. **Canned fish** was relatively more frequently associated with *not a filling meal* and *has a taste I dislike*. To a lesser extent **sausages** were linked with these two statements, however, what sets these two choices apart is their association with *is a healthy meal* – half of the respondents selected canned fish, but only a quarter selected sausages.

Steak and **lamb for roast** were most often associated with *is too expensive for the meal*, however, they were often associated with *is popular with the people who will be eating the meal*. **Whole chicken** and a **pasta dish** were also seen as *popular with the people who will be eating the meal*, although in relative terms, a pasta dish was linked with *I can cook it in the microwave* and whole chicken with *there is wastage as a lot of what you buy can't be eaten* (**pork chops** were also relatively more often associated with wastage).

Matrix 4.2.2b – Association between Meal Choice and Attitudes

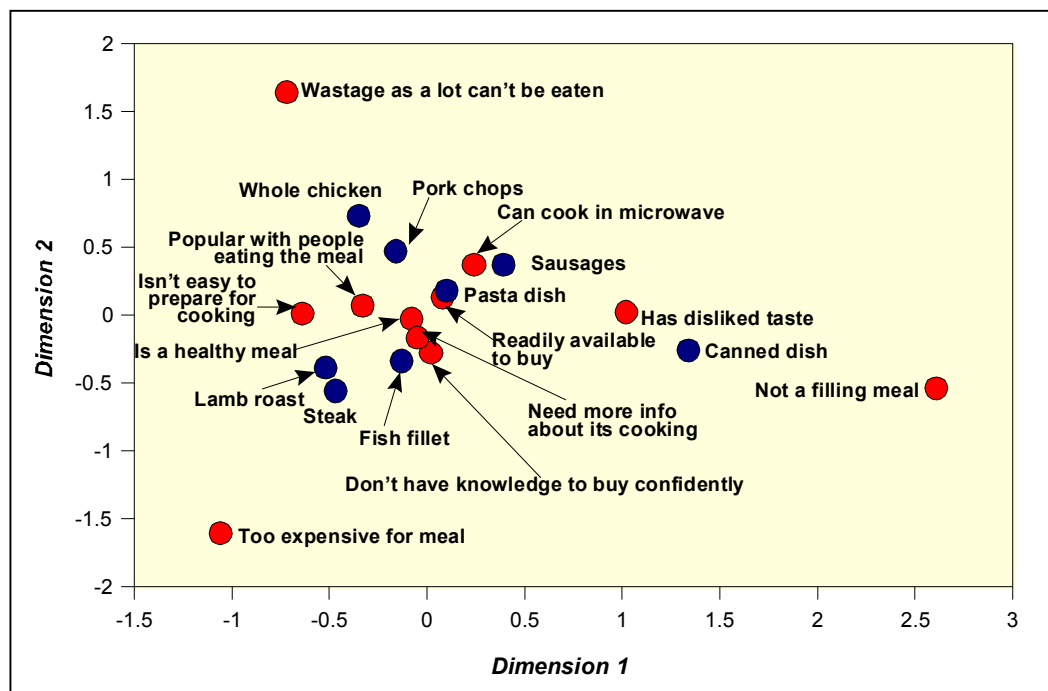


Table 4.2.2b – Household Evening Meal (%)

	Canned Fish	Fish Fillet	Pasta Dish	Sausages	Steak	Pork Chops	Whole Chicken	Lamb for Roast	None	Don't Know
Is too expensive for the meal	2	13	1	1	23	4	3	27	47	4
I need more info about its cooking	4	6	5	1	2	4	4	6	73	5
Is readily available to buy	85	83	85	86	86	83	88	85	3	–
I don't have the knowledge to buy it confidently	3	9	5	2	2	5	1	4	72	5
It isn't easy to prepare for cooking	2	6	2	1	2	2	7	8	74	4
Is not a filling meal	34	5	6	9	0	1	1	1	49	5
Has a taste that is disliked	17	6	6	10	3	8	3	7	50	4
There is wastage as a lot of what you buy can't be eaten	1	2	1	4	2	11	19	9	60	5
I can cook it in the microwave	11	10	19	9	6	7	12	7	65	6
Is a healthy meal	52	82	57	25	58	41	58	53	3	1
Is popular with the people who will be eating the meal	23	50	55	35	58	34	61	57	1	1

Base: Meal occasion (household evening meal) prepared at least once a year weighted by household structure (n=255; N=281,000).

Q4: I'm going to read out a number of statements and would like you to tell me to which, if any, each statement applies. You may nominate none, one or as many as you like. There are no right or wrong answers, we are just interested in your opinion.

Weekend Household Meal – Lunch

In regard to a weekend household lunch, **whole fish** was most frequently associated with a *healthy meal* and the perception that *I need more information about its cooking*. In relative terms, **prawns** were also more often associated with *I need more information about cooking*, *is too expensive for the meal*, *I don't have the knowledge to buy it confidently*, *it isn't easy to prepare for cooking* and *has a taste I dislike*.

Like prawns, **steak** and **lamb for roast** were also viewed as *too expensive for the meal*. However, lamb for roast is *popular with the people who will be eating the meal*, but was not seen as *easy to prepare for cooking*. A **pasta dish** and **whole chicken** were also viewed as *popular with the people who will be eating the meal*. In addition, a pasta dish was associated with *I can cook it in the microwave* and whole chicken with *there is a lot of wastage as a lot of what you buy can't be eaten*. **Canned fish** and a **pie/pastie** were relatively strongly associated with *is not a filling meal* and *has a taste I dislike*, however, a pie/pastie was also associated with *I can cook it in the microwave* (not so canned fish).

Matrix 4.2.2c – Association between Meal Choice and Attitudes

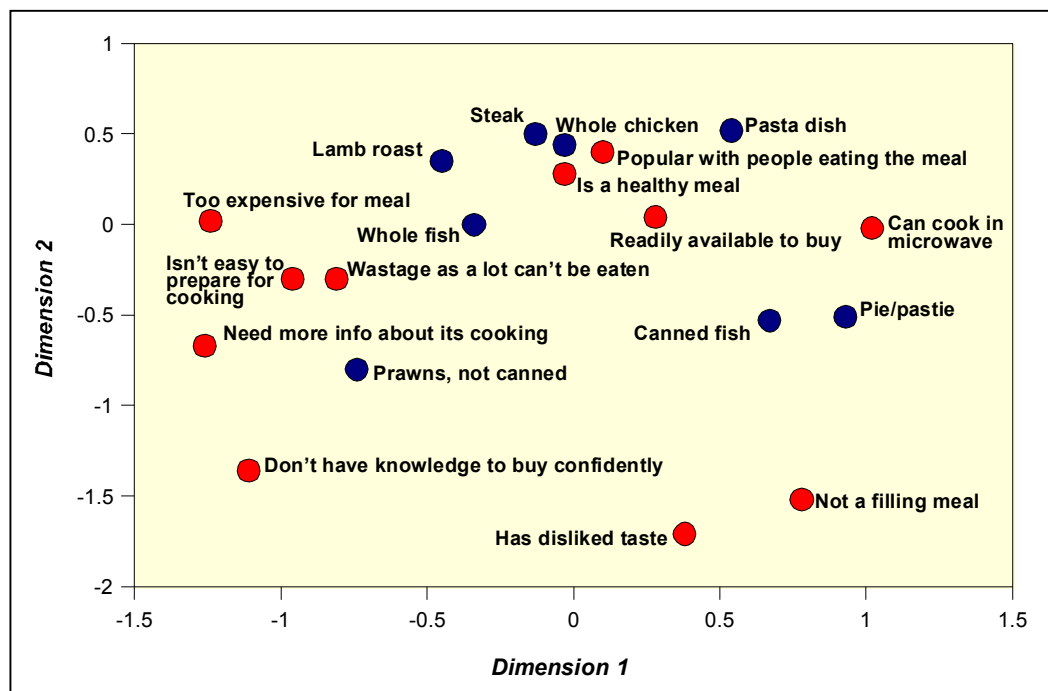


Table 4.2.2c – Weekend Household Meal – Lunch (%)

	Canned Fish	Whole Fish	Prawns (not canned)	Pasta Dish	Steak	Whole Chicken	Lamb for Roast	Pie/Pastie	None	Don't Know
Is too expensive for the meal	2	18	42	3	31	14	39	2	28	1
I need more info about its cooking	1	9	12	1	2	3	4	1	71	4
Is readily available to buy	86	76	71	84	81	90	82	85	2	2
I don't have the knowledge to buy it confidently	2	9	14	2	1	1	2	2	71	5
It isn't easy to prepare for cooking	3	12	17	5	2	8	13	2	59	4
Is not a filling meal	21	3	16	5	2	2	4	16	52	6
Has a taste that is disliked	16	8	17	1	3	1	2	14	49	2
There is wastage as a lot of what you buy can't be eaten	2	15	18	2	1	18	8	4	50	4
I can cook it in the microwave	6	9	6	20	6	10	6	25	57	6
Is a healthy meal	58	83	49	62	68	71	58	27	1	–
Is popular with the people who will be eating the meal	34	46	36	61	52	56	60	36	–	1

Base: Meal occasion (weekend household lunch) prepared at least once a year weighted by household structure (n=147; N=162,000).

Q4. I'm going to read out a number of statements and would like you to tell me to which, if any, each statement applies. You may nominate none, one or as many as you like. There are no right or wrong answers, we are just interested in your opinion.

Entertaining – Entrée

For an entertaining entrée, **oysters/mussels, salmon (not canned), scallops and prawns (not canned)** were perceived in relative terms as *too expensive for the meal* when compared to non fish/seafood options. **Prawns**, like **pasta** and **soup** were associated with being *popular with the people who will be eating the meal*. However prawns, and to a lesser extent oysters, were associated with *wastage as a lot of what you buy can't be eaten*.

Oysters/mussels were associated with a number of negatives that would limit their selection for an entertaining entrée. These included, *has a taste I dislike, is not a filling meal, I don't have the knowledge to buy it confidently, it isn't easy to prepare* and *I need more information about its cooking*. **Scallops** were positioned closer to oysters/mussels than other fish/seafood options as they too were viewed as *not a filling meal* and *I need more information about its cooking*. Soup, pasta and vegetarian meals were viewed as ones that *can be cooked in the microwave*. However, in absolute terms, vegetarian, **salmon** and soup were seen as *a healthy meal* for an entertaining entrée.

Matrix 4.2.2d – Association Between Meal Choice and Attitudes

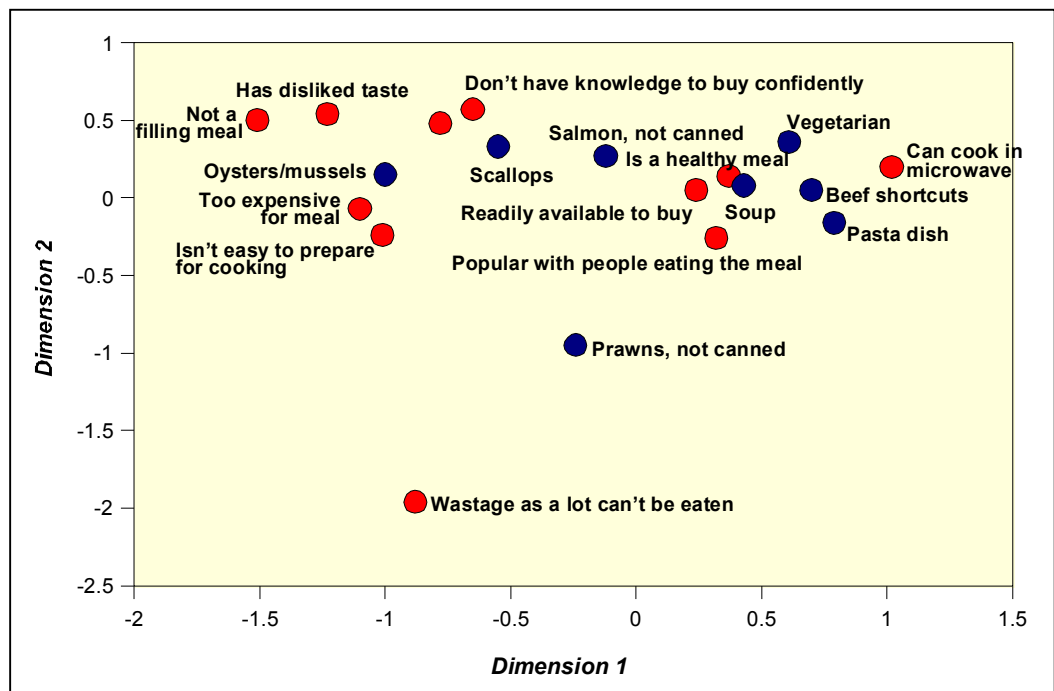


Table 4.2.2d – Entertaining – Entrée (%)

	Salmon (not canned)	Prawns (not canned)	Scallops	Oysters/Mussels	Pasta Dish	Vegetarian	Beef Short-cut Pieces	Soup	None	Don't Know
Is too expensive for the meal	27	25	27	32	1	1	5	2	35	5
I need more info about its cooking	10	6	13	14	2	6	6	0	57	7
Is readily available to buy	73	81	76	74	82	81	80	78	3	2
I don't have the knowledge to buy it confidently	11	8	19	24	0	3	5	–	58	5
It isn't easy to prepare for cooking	10	14	10	18	–	4	3	2	60	5
Is not a filling meal	7	7	14	26	1	5	3	11	51	7
Has a taste that is disliked	7	10	22	40	0	5	2	–	40	5
There is wastage as a lot of what you buy can't be eaten	2	32	7	20	5	–	4	3	50	5
I can cook it in the microwave	6	7	5	4	19	18	7	20	62	8
Is a healthy meal	75	66	57	53	69	84	61	77	0	–
Is popular with the people who will be eating the meal	50	71	47	42	69	45	43	64	1	0

Base: Meal occasion (entertaining entrée) prepared at least once a year weighted by household structure (n=95; N=114,000).

Q4: I'm going to read out a number of statements and would like you to tell me to which, if any, each statement applies. You may nominate none, one or as many as you like. There are no right or wrong answers, we are just interested in your opinion.

Entertaining – Main

For an entertaining main meal, **chicken fillet/pieces**, **steak** and **pasta** dishes were viewed as being *popular with the people who will be eating the meal*. A pasta dish was also perceived as one which can be *cooked in the microwave*, while steak may be *too expensive for the meal*. While less popular with people who will be eating the meal, **whole fish** and **fish fillets** had a strong association with *is a healthy meal*. However, preparation of whole fish as an entertaining main meal may be limited by its relative association with *I don't have the knowledge to buy it confidently*, *it isn't easy to prepare for cooking* and *I need more information about its cooking*.

Relative to other meal choices, **prawns** were clearly defined by being *too expensive for the meal* (steak to a lesser extent), *is not a filling meal*, *there is wastage as a lot of what you buy can't be eaten* and *has a taste that is disliked*. Relative to other statements, **pork for roast** and **veal** were also associated with *has a taste that is disliked*, however, in absolute terms, each was disliked by fewer than one in five respondents.

Matrix 4.2.2e – Association Between Meal Choice and Attitudes

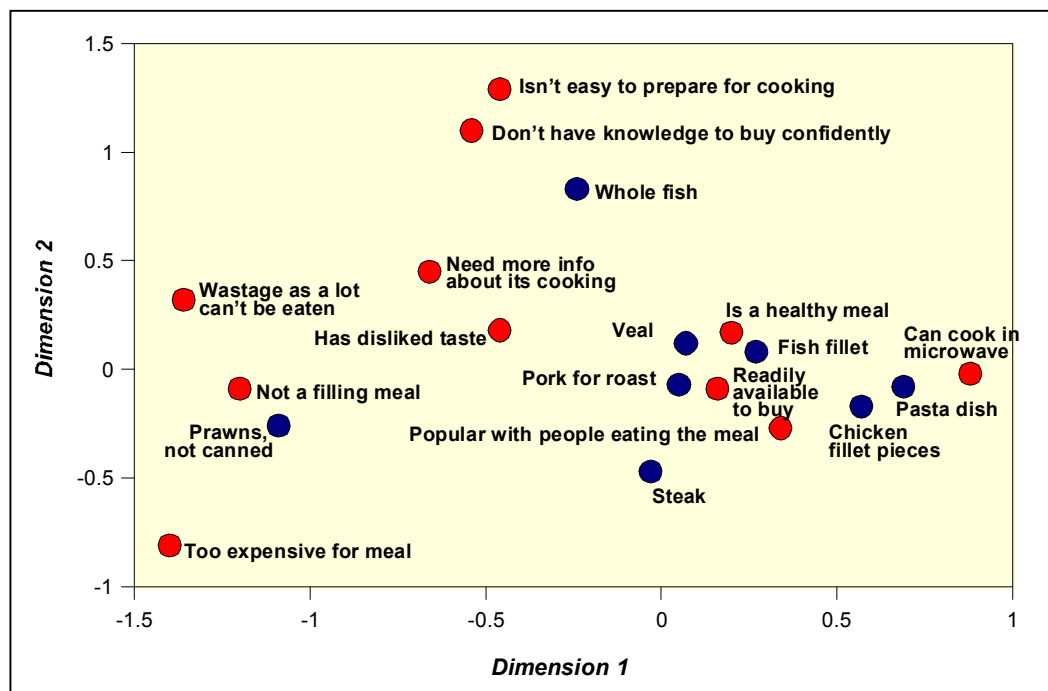


Table 4.2.2e – Entertaining – Main (%)

	Whole Fish	Fish Fillet	Prawns (not canned)	Pasta Dish	Steak	Chicken Fillet/Pieces	Pork for Roast	Veal	None	Don't Know
Is too expensive for the meal	12	8	43	–	24	4	12	10	30	2
I need more info about its cooking	9	2	9	3	5	3	1	5	68	5
Is readily available to buy	77	77	78	83	84	85	81	77	2	3
I don't have the knowledge to buy it confidently	18	6	10	3	6	3	5	7	60	5
It isn't easy to prepare for cooking	15	6	9	4	2	3	6	4	55	3
Is not a filling meal	7	9	21	5	2	2	1	3	56	5
Has a taste that is disliked	8	9	12	3	6	2	10	15	51	4
There is wastage as a lot of what you buy can't be eaten	13	1	20	1	4	5	9	1	53	5
I can cook it in the microwave	7	13	4	19	6	12	6	5	66	6
Is a healthy meal	78	76	53	62	65	67	54	52	2	0
Is popular with the people who will be eating the meal	42	48	41	58	59	65	48	31	–	3

Base: Meal occasion (entertaining main) prepared at least once a year weighted by household structure (n=168; N=202,000).

Q4. I'm going to read out a number of statements and would like you to tell me to which, if any, each statement applies. You may nominate none, one or as many as you like. There are no right or wrong answers, we are just interested in your opinion.

Children's Evening Meal

For a children's evening meal, the meal options that were most strongly associated with *is popular with the people who will be eating the meal* were **pasta**, **sausages** and **mince/rissoles**. Pasta dishes were also seen as those that *I can cook in the microwave*, while mince/rissoles were relatively more often linked with *it isn't easy to prepare for cooking*. **Canned fish** and **canned vegetables/meat** were *not* seen as *popular with the people who will be eating the meal* – perhaps because of their association with *a taste that is disliked*. Canned vegetables/meat was also most often linked with *is not a filling meal*.

Fish fillets were more uniquely perceived relative to other meal options for *being a healthy meal* (shared with a pasta dish), however, were relatively more often associated with *being too expensive for the meal*, *I don't have the knowledge to buy it confidently* and *I need more information about its cooking*. **Fish fingers** and **pie/pasties** were perceived similarly and generally received average scores across the eleven statements, although pie/pasties (like pasta) were thought of as suitable to *cook in the microwave*.

Matrix 4.2.2f – Association Between Meal Choice and Attitudes

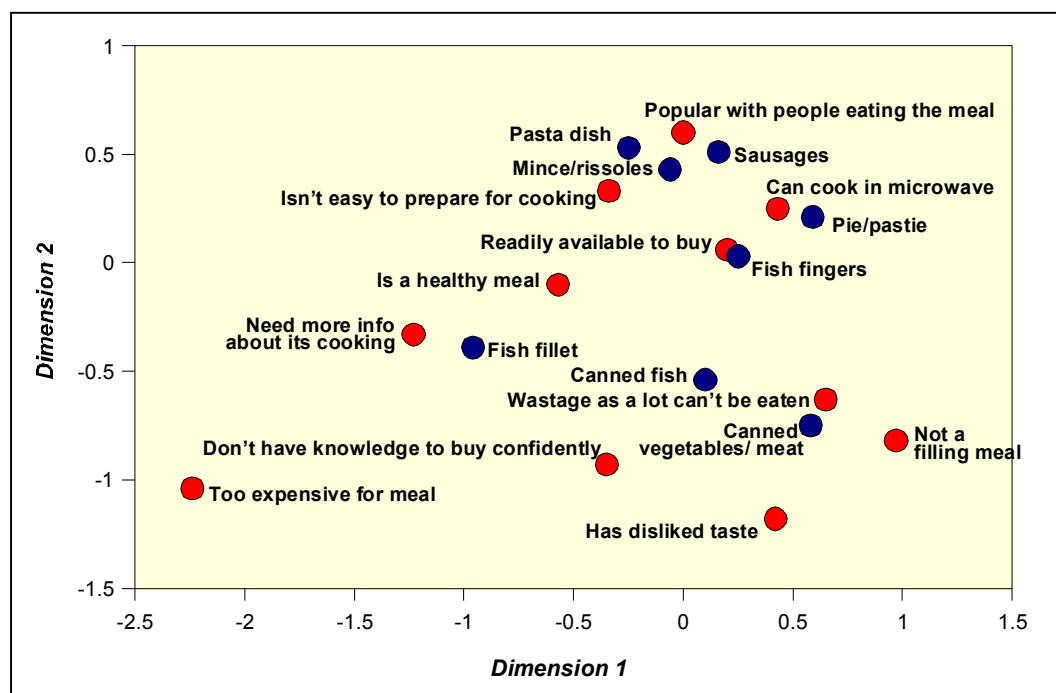


Table 4.2.2f – Children's Evening Meal (%)

	Canned Fish	Fish Fillet	Fish Fingers	Pasta Dish	Sausages	Mince/Rissoles	Pie/Pastie	Canned Vegetables/ Meat	None	Don't Know
Is too expensive for the meal	2	19	4	2	1	2	–	1	71	4
I need more info about its cooking	2	7	1	2	2	1	2	1	80	6
Is readily available to buy	89	88	89	88	93	90	89	84	3	1
I don't have the knowledge to buy it confidently	2	9	2	2	2	3	2	7	78	4
It isn't easy to prepare for cooking	2	8	3	6	3	10	4	3	79	4
Is not a filling meal	12	5	13	4	4	3	13	19	57	6
Has a taste that is disliked	26	17	11	3	8	8	10	27	36	2
There is wastage as a lot of what you buy can't be eaten	5	2	2	5	2	2	4	9	76	6
I can cook it in the microwave	9	11	14	27	8	11	26	17	48	3
Is a healthy meal	56	84	31	80	29	43	22	36	1	1
Is popular with the people who will be eating the meal	30	45	44	73	59	55	46	25	2	–

Base: Meal occasion (children's evening meal) prepared at least once a year weighted by household structure (n=124; N=117,000).

Q4: I'm going to read out a number of statements and would like you to tell me to which, if any, each statement applies. You may nominate none, one or as many as you like. There are no right or wrong answers, we are just interested in your opinion.

4.2.3 Ratings of Factors When Choosing Fish/Seafood for a Meal at Home

In-home respondents who had bought fresh or frozen fish/seafood from a fish or general market, fish shop, fish and chip shop or supermarket in the last week were asked to rate the level of importance (on a scale from 1 *not at all important* to 7 *very important*) of eight statements when actually selecting a specific type of fresh fish for a meal at home. The statements were rotated to prevent ordering bias.

Statements about Fish Selection for a Meal at Home

<ul style="list-style-type: none"> ▪ The fish is the species I want ▪ I can be sure that it doesn't have bones ▪ Is a relatively low price ▪ Has a light flavour 	<ul style="list-style-type: none"> ▪ Has a white or light coloured flesh ▪ I can be sure that the fish is correctly labelled ▪ It is fresh rather than frozen ▪ Recommended by the retailer
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Of greatest importance to grocery buyers when selecting fresh fish is that *I can be sure that the fish is correctly labelled*. Nine in ten respondents (92%) rated this as very important (top two codes), with an average rating of 6.7 out of 7:

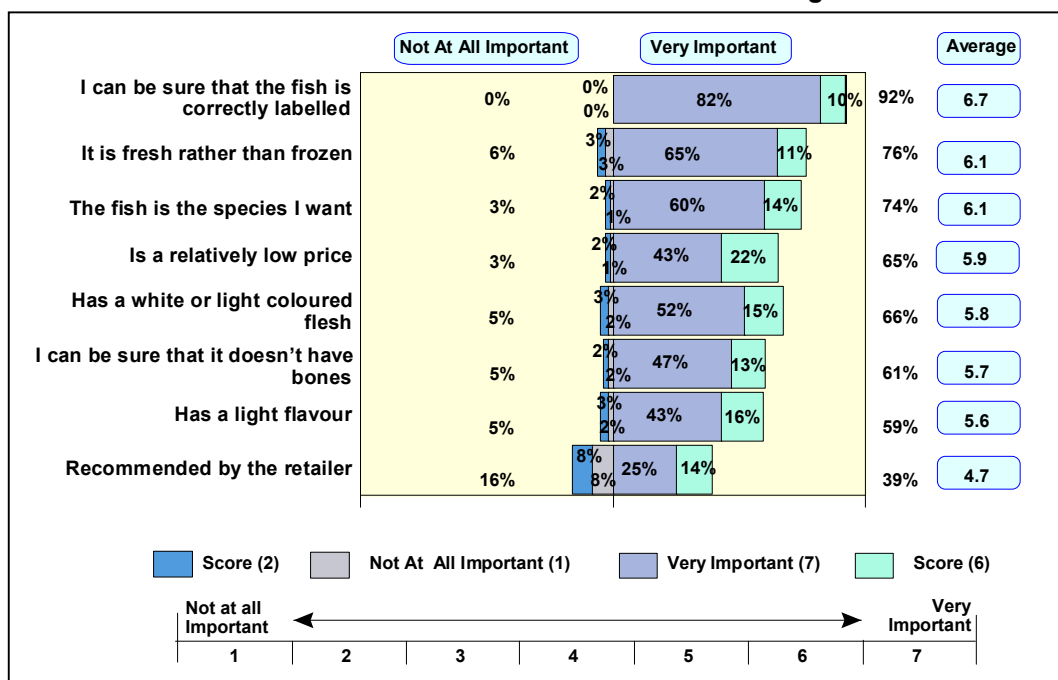
- On average, those with a household income under \$25,000pa (6.5) and over \$80,000pa (6.5) rated correct labelling as less important than households with an income between \$25,000 and \$40,000pa (6.9).

Two factors rated above an average score of 6 points:

- *It is fresh rather than frozen* (6.1) – 76% rated very important. On average, this was more important to couples (6.4) than singles (5.8); and
- *The fish is the species I want* (6.1) – 74% rated very important. On average, this was more important to those in households with an income between \$25,000 and \$40,000pa (6.5).

Two in three respondents (65%) considered it very important that the fish is a *relatively low price* (an average rating of 5.9) – and *has a white or light coloured flesh* (66%, average rating of 5.8). Three in five (61%) thought it important that *I can be sure that it doesn't have bones* (average rating of 5.7) and the fish has a *light flavour* (59%, average rating of 5.6). Of least importance was that the fish is *recommended by the retailer*. Two in five (39%) considered recommendation as important (average rating of 4.7).

Chart 4.2.3 – Factors Considered When Choosing Fish



Base: Respondents who had bought fresh or frozen fish/seafood from a fish or general market, fish shop, fish and chip shop or supermarket in the last week weighted by household structure (n=400; N=467,000).

Q18c: Now I would like you to think about when you are actually selecting a specific type of fresh (or frozen) fish for a meal at home. Again on a scale of 1 to 7, how important are each of the following factors?

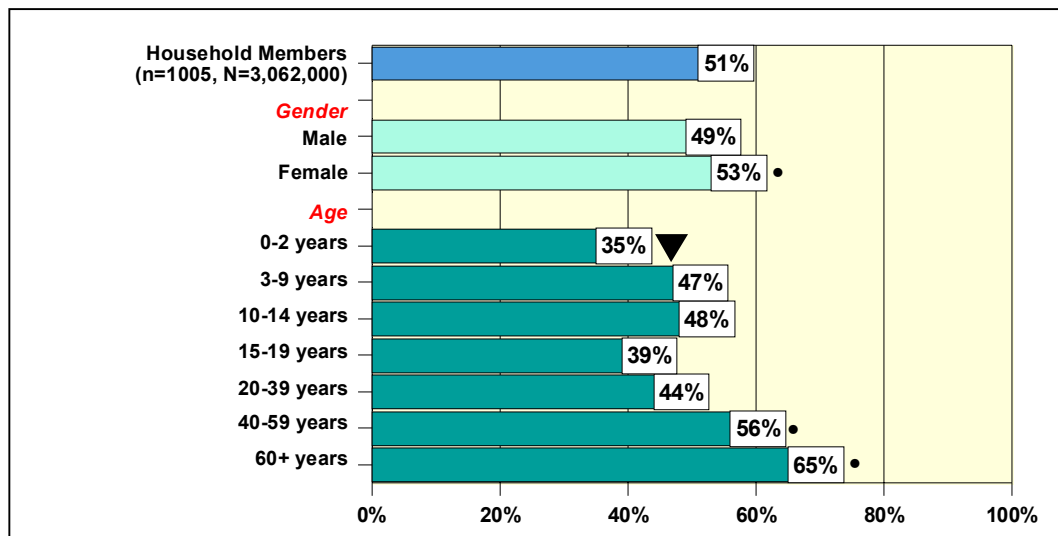
4.2.4 Incidence of Fish/Seafood Consumption in Home

In-home respondents were asked a series of questions that established for each day in the week preceding the survey if they had eaten breakfast, lunch or dinner, in-home, out-of-home or if they did not eat at this meal occasion. For each meal eaten they were then asked whether any type of fish or seafood was consumed. If fish or seafood was eaten in-home at a meal occasion, each household member who ate the fish or seafood was identified. Further questioning established if they had eaten any type of seafood at any other time during the week and if anyone else in their household ate fish or seafood at home during the week.

Overall, **one half (51%) of Melbournians had eaten fish or seafood in-home in the last week**. There were notable differences in consumption by gender and age:

- A higher proportion of females (53%) than males (49%) had eaten fish/seafood in-home in the last week; and
- Those aged 40 years or more were more likely to have eaten fish/seafood in-home in the last week – 40 to 59 years (56%) and 60 or more years (65%) – particularly when compared to infants (0 to 2 years – 35%).

Chart 4.2.4a – Incidence of Fish/Seafood Consumption In-Home Last Week by Individuals



Base: All household members weighted by household structure (n=1,005; N=3,062,000).

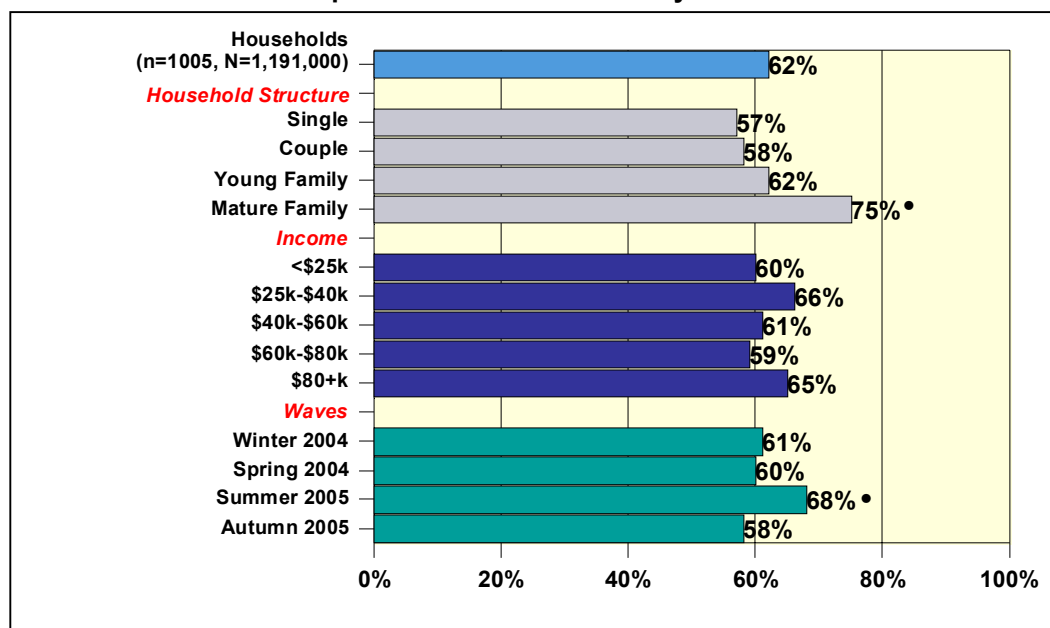
▼ ▲ Denotes significant differences within each demographic group

Using the same series of questions, it was also possible to establish data proportion of households in which fish or seafood had been eaten in-home in the week preceding the survey.

Overall, **fish or seafood had been eaten, at least once, in three in five Melbourne households (62%) in the last week**. There were notable differences in consumption *incidence* by household structure and time of year, although household income was not a statistically significant factor:

- A higher proportion of mature families, had eaten fish/seafood in the last week (75%) than any other household structure; and
- Fish or seafood was more likely to be eaten in-home during summer (68%) than autumn (58%).

Chart 4.2.4b – Incidence of Fish/Seafood Consumption In-Home Last Week by Households



Base: Households weighted by household structure (n=1,005; N=1,191,000).

▼▲ Denotes significant differences within each group

4.2.5 Type of Fish/Seafood Consumed in Home

The following two tables provide a more detailed breakdown of data presented in Section 4.2.4. The incidence of fish, seafood or a combination of fish and seafood consumption in-home is shown for each household member and for Melbourne households overall.

As shown in the accompanying table, 51% of household members had eaten fish/seafood in the last week – 47% ate fish, 6% ate seafood and 4% ate both fish and seafood at a meal. Females were more likely to have eaten fish in-home in the last week than males, however, the proportion of males and females who had eaten seafood did not differ.

Of those who had eaten fish, they each consumed on average 170.8 grams per meal. There was little difference in the average weight of seafood consumed per person per meal (174.3 grams).

Table 4.2.5a – Type of Consumption by Individuals (%)

		Gender		Age Group							Average Weight Consumed per person per meal (grams)
		Total	Male (A)	Female (B)	0–2 (C)	3–9 (D)	10–14 (E)	15–19 (F)	20–39 (G)	40–59 (H)	
Respondents	1005	861	925	103	221	155	161	530	500	266	
Weighted Respondents ('000)	3062	1461	1600	107	292	201	199	871	854	538	
Fish	47	45	49 ^A	31 ^{DE}	42 ^{FHI}	44 ^{FHI}	33 ^{GHI}	41 ^{HI}	52 ^I	62	170.8
Seafood	6	6	6	2 ^{HI}	5 ^H	4 ^H	6	4 ^{HI}	9	7	174.3
Combination (Fish/Seafood)	4	3	4	4	3	5	5	3	4	3	171.7
Did not eat in last week	49	51 ^B	47	65 ^{DE}	53 ^{HI}	52 ^{HI}	61 ^{HI}	56 ^{HI}	44 ^I	35	

Base: All household members weighted by household structure (n=1,005; N=3,062,000).

As shown in the accompanying table, 62% of households had at least one person who had eaten fish/seafood in the last week – 58% ate fish, 8% ate seafood and 4% ate a combination of fish and seafood at a meal. Of households that had eaten fish, on average, 345.5 grams was consumed per meal. The average weight of seafood consumed per meal (of seafood eating households) was slightly higher (357.1 grams).

Details of the species consumed in-home in the week prior to interview for both individuals and households and significant differences in the incidence of consumption by respondent or household characteristics are summarised in the accompanying table.

The most commonly eaten species eaten by **individuals** in the home were canned tuna (13%), flake (10%), fish fillet/white fish not specified (5%), canned salmon (4%), prawns (4%), flathead (3%), blue grenadier (3%), salmon (3%) and whiting (3%).

- A higher proportion of females than males ate canned tuna (15% and 10% respectively) and canned salmon (5% and 3% respectively) in-home in the last week;
- Consumption of other common species was often higher among those aged 60 years or more; and
- Fish fingers were more often eaten by children and teenagers (3%, 0 to 2 years, 3 to 9 years and 10-14 years).

While the most common species consumed at least once in the **household** are the same as for individuals, the proportion of households in which each was eaten was, in most cases, slightly higher: canned tuna (18%); flake (11%); fish fillet/white fish not specified (6%); canned salmon (7%); prawns (4%); flathead (4%); blue grenadier (4%); salmon (3%) and whiting (3%).

- Consumption of common species was often higher in mature family households: canned tuna (26%), canned salmon (12%) and fish fillet/white fish (11%). This was also true for some of the less commonly eaten species: snapper (4% compared to 2% in total) and canned pilchards/sardines (8% vs 2%); and
- On the basis of household income: hake was more commonly eaten in households earning \$25,000 to \$40,000 (7%) than under \$25,000 (1%); blue grenadier in households earning \$40,000 to \$60,000 (6%) than over \$60,000 (2%).

Table 4.2.5b – Type of Consumption in Home by Households (%)

	Total	Household Structure				Household Income					Average Weight Consumed per meal (grams)
		Single (A)	Couple (B)	Young Family (C)	Mature Family (D)	<\$25K (E)	\$25-\$40K (F)	\$40-\$60K (G)	\$60-\$80K (H)	Over \$80K (I)	
Respondents	1005	237	205	412	151	190	94	118	99	197	
Weighted Households ('000)	1191	328	290	380	193	264	119	135	106	206	
Fish	58	53 ^D	55 ^D	55 ^D	74	56	61	57	56	61	345.5
Seafood	8	8	8	8	7	7	13	7	5	8	357.1
Combination (Fish/Seafood)	4	4	4	6 ^D	1	4	4	7	6	3	449.9
No one in household ate in last week	38	43 ^D	42 ^D	38 ^D	25	40	34	39	41	35	–

Base: Households weighted by household structure (n=1,005; N=1,191,000).

Table 4.2.5c – Species Consumed in Home in Last Week (%)

Species with at least 1% mention	Significant Differences by Age and Gender of Household Member (High)		Significant Differences by Household Structure and Income (High)	
	Total Resps.		Total H/hold	
Respondents	1005		1005	
Weighted Respondents Households ('000)	3062		1191	
FISH				
Anchovies	1		1	
Cod – smoked	1		1	
Cod – unspecified			1	
Dory, John	1		1	
Flake	10	10 – 14 years (15%) 40 – 59 years (12%)	11	
Flathead	3	60+ years (6%)	4	Couple (7%)
Grenadier, Blue	3	60+ years (5%)	4	Single (6%) \$40K – \$60K (6%)
Hake	3		3	\$25K – \$40K (7%)
Herring			1	
Perch	1		1	
Salmon	3		3	Mature family (5%)
Salmon – canned	4	Female (5%) 60+ years (12%)	7	Mature family (12%) <\$25K (10%) \$40k – \$60K (10%)
Salmon – smoked	1		1	Single (3%)
Snapper	2		2	Mature family (4%)
Trevally	2		2	
Trout (unspecified)	1		1	
Tuna	1		1	\$80K+ (4%)
Tuna – canned	13	Female (15%) 10 – 14 years (16%) 40 – 59 years (15%) 60+ years (14%)	18	Young family (21%) mature family (26%)
Whiting	3		3	
Pilchards/sardines – canned	1	60+ years (5%)	2	Mature family (8%)
Rockling	1		1	
Fish fillet/white fish/not specified	5		6	Mature family (11%)
NET FISH	48	Female (50%) Male (45%)	58	Mature family (74%)

Table 4.2.5c – Species Consumed in Home in Last Week (%)
cont...

Species with at least 1% mention	Total Resps.	Significant Differences by Age and Gender of Household Member (High)	Total H/hold	Significant Differences by Household Structure and Income (High)
Respondents	1005		1005	
Weighted Respondents Households ('000)	3062		1191	
SEAFOOD				
Crab			1	
Mussels			1	
Oysters			1	
Prawns	4	40 – 59 years (5%)	4	
Scallops	1		1	
Squid/calamari	1		1	
NET SEAFOOD	6	40-59 years (8%)	8	
COMBINATION				
Marinara mix	1		1	
Fish fingers	1	0 – 2 years (3%) 3 – 9 years (3%) 10 – 14 years (3%)	2	
Fishermen's basket/mixed seafood	1		1	
Seafood pizza			1	
NET COMBINATION	4		4	

Base: All household members/ households weighted by household structure.

Q13. What type (species) of fish/seafood was that?

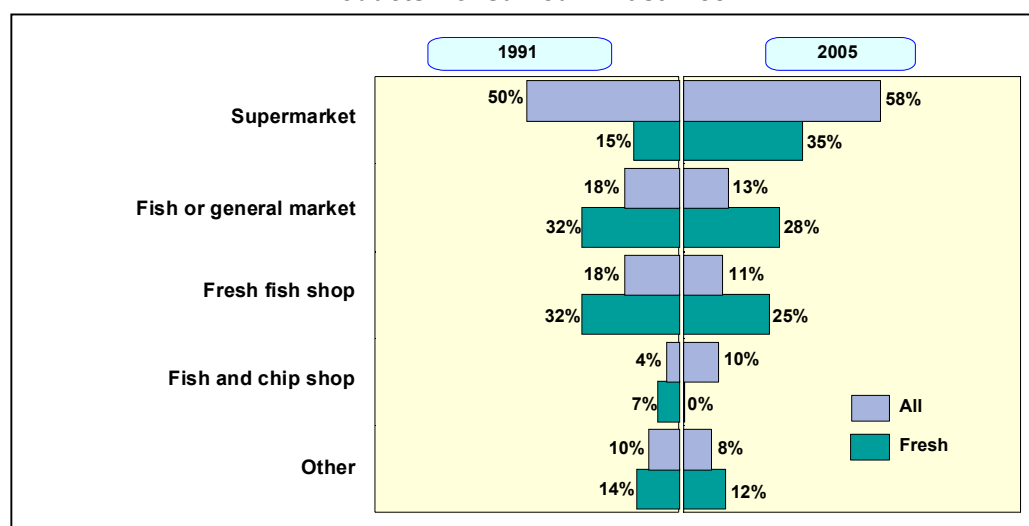
4.2.6 Purchase and Preparation Fish/Seafood for In Home Consumption

4.2.6.1 Location of Purchase of Fish/Seafood Products

In-home respondents who indicated that fish/seafood had been consumed in the home in the last week were asked to specify the location of purchase for each occasion. Supermarkets accounted for almost three in five occasions (58%) in which **all fish/seafood products** had been eaten in-home, with fish or general markets (13%), fresh fish shops (11%) and fish and chip shops accounting for a similar share of fish/seafood products. When analysed by just **fresh fish/seafood products**, the distribution was somewhat more even between outlet types. The share of purchase occasions for supermarkets declined to one in three (35%), followed by fish or general markets (28%) and fresh fish shops (25%).

There have been significant changes in the structure of the market for fish/seafood products since 1991. Supermarkets now account for a greater share of occasions in which all fish/seafood products had been eaten in-home and most notably an increase in fresh fish/seafood products. In 1991, supermarkets accounted for half of the occasions (50%) in which **all fish/seafood products** had been eaten in-home and increased to almost three in five occasions (58%) in 2005. In terms of **fresh fish/seafood**, in 1991 supermarkets (15%) ranked third behind fish or general markets (32%) and fresh fish shops (32%). However in 2005, supermarkets now account for more fresh fish/seafood purchases for in-home consumption (35%) than fish or general markets (28%) and fresh fish shops (25%).

Chart 4.2.6a – Location of Purchase for Fish/Seafood Products Consumed in Last Week



Base: Occasions fish prepared in last week weighted by household structure: all fish/seafood (n=626, N=1,319,000), fresh fish/seafood* (n=352; N=567,000).

Q12b: Where did you (or someone else in your household) buy or obtain this fish/seafood?

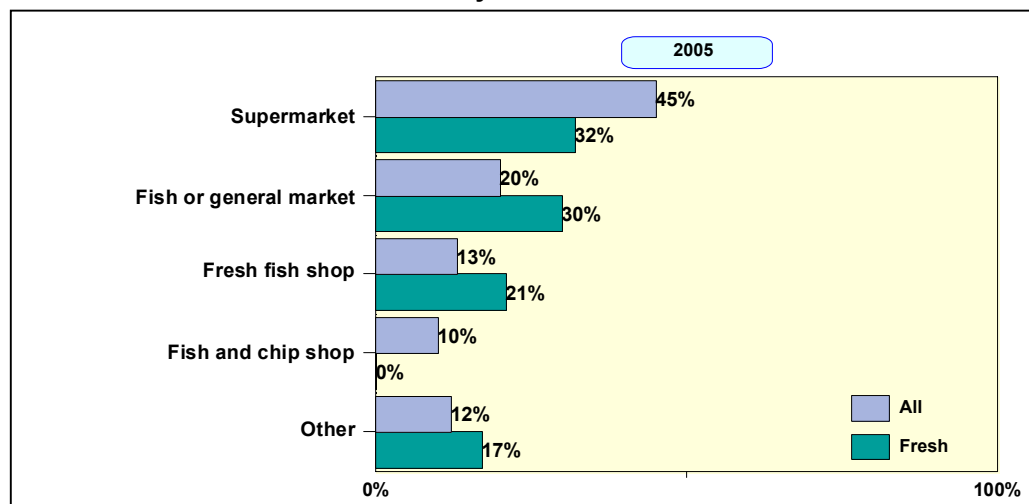
* Fresh fish includes all fresh fish/seafood, frozen (unprocessed), fillets/whole fish and fresh prepared ready to cook.

Fish/seafood purchases by households that had eaten fish or seafood in-home in the last week have also been analysed by the weight bought through each type of outlet. Overall, it is estimated that 458,306kg of all fish/seafood and 277,345kg of fresh fish/seafood was bought for in-home consumption in the last week.

- Supermarkets accounted for just under half (45% or 208,059kg) of the volume of all fish/seafood bought for in-home consumption in the last week, although for 58% of purchase occasions. The share of fresh fish/seafood was 32% of the volume;
- Fish or general markets accounted for 20% of the volume (91,213kg) and was over represented when compared to purchase occasions (13%). Fresh fish/seafood bought through a fish or general market was 30% of the total volume; and
- Fresh fish shops followed with 13% of the total volume of all fish/seafood products (60,019kg) bought in the last week for in-home consumption and 21% of the volume of fresh fish/seafood.

Fish and chip shops accounted for 10% of the total volume (46,609kg) and of purchase occasions. Other types of outlets (e.g. fishers and cooperatives) represented the remaining 12% of the total volume of all fish/seafood and 17% of fresh fish products.

Chart 4.2.6b – Total Weight of Fish/Seafood in Households in Last Week by Location of Purchase



* Fresh fish includes all fresh fish/seafood, frozen (unprocessed), fillets/whole fish and fresh prepared ready to cook

Base: Respondents (households) in which fish/seafood eaten in-home in last week weighted by household structure:

- all fish/seafood (n=626; N=739,000) – total weight = 458,306kg

- fresh fish/seafood* (n=352; N=413,000) – total weight = 277,354kg

Q12b: Where did you (or someone else in your household) buy or obtain this fish/seafood?

As previously mentioned, it is estimated that 458,306kg of **all fish/seafood** was served in Melbourne households in the last week. This equates to an average of 620.5 grams for each of the 62% of households that served fish/seafood in the last week, and an average of 384.8 grams across all 1,191,000 Melbourne households (refer to section 4.1.1.2). An average of 347.7 grams was served in-home at each occasion. **This extrapolates to an average per capita in-home consumption of all fish/seafood of 7.8 kilograms annually.**

The estimated weight of **fresh fish/seafood** served in Melbourne households (277,354 kilograms) represented 61% of the total for all fish/seafood products, equating to an average of 672.1 grams for each fresh fish/seafood eating household weekly. **This extrapolates to an average per capita in-home consumption of fresh fish/seafood of 4.7 kilograms annually.**

In 1991 it was estimated that 171,440kg of **fresh fish/seafood** was bought for in-home consumption in the last week (31% of households served fresh fish/seafood in last week), with just over 100,000kg more consumed in-home in 2005 (277,354kg) – 35% of households served fresh fish/seafood. This equates to an average of 583.1 grams for each fresh fish/seafood eating household in 1991 and 672.1 grams in 2005. Based on the weight bought through each type of outlet in 1991: 33% of the volume was sold through fish or general markets; 32% through fresh fish shops; 16% through supermarkets; 4% through fish and chip shops; and 15% of the fresh fish/seafood was sold through other outlets.

Similarly to the change in the incidence of fresh fish/seafood purchase occasions between 1991 and 2005, these results for volumes sold demonstrate the increasing influence of supermarkets in the distribution of fresh fish/seafood (16% of volume in 1991 and 32% in 2005). Similarly large increases in market share were recorded in the Sydney and Perth studies in 1999.

Table 4.2.6a – Total Weight of Fresh Fish/Seafood Served in Households in Week by Location of Purchase (In Home)

	Total	Fish/General Market	Fresh Fish Shop	Fish and Chip Shop	Supermarket	Other/Don't Know
1991						
Respondents	430	159	152	34	73	76
Weighted Households ('000)	294	107	106	23	52	47
Total weight (kilograms)	171,440	56,314	54,611	6348	27513	26,654
Average weight (grams)	583.1	526.3	515.2	567.1	529.1	567.1
2005						
Respondents	352	91	83	2*	150	43
Weighted Households ('000)	413	105	103	2	175	48
Total weight (kilograms)	277,354	84,073	57,980	651	89,652	46,839
Average weight (grams)	672.1	799.3	563.6	343.7	513.0	980.3

* Caution low sample base.

Base: Occasions households purchased fish/seafood in the last week weighted by household structure.

Q15a: What was the total weight of [READ OUT TYPE] served at this meal?

4.2.6.2 Form Bought of Fish/Seafood Species for In Home Consumption

The form of purchase by the type of outlet reveals that:

- The most common purchases at **fish and general markets** were fresh fillets/cutlets (58%) and fresh whole fish/seafood (27%). Very little was bought in frozen form. The vast majority (89%) was cooked and served by someone in-home;
- A similar distribution for **fresh fish shops** emerged: 64% of purchase occasions were of fresh fish/cutlets and 18% fresh whole fish/seafood;
- Purchases from **fish and chip shops** were almost exclusively of a cooked fillet (97%); and
- Canned products dominated fish/seafood purchases from **supermarkets** (61%). Another 14% of purchase occasions for in-home consumption were of fresh fillets/cutlets, 7% frozen fillets/cutlets and 2% fresh whole fish. Most often fish/seafood products for in-home consumption were bought to be cooked and served in the home (67%).

Table 4.2.6b – Form of Seafood Bought and Prepared by Point of Purchase (% of purchases)

	Total	Fish/General Market	Fresh Fish Shop	Fish and Chip Shop	Supermarket	Other/Don't Know
Outlets	763	93	85	102	409	74
Weighted Outlets ('000)	1324	168	151	131	766	107
FORM BOUGHT						
Fresh whole	9	27	18	–	2	28
Fresh fillets/cutlet	25	58	64	1	14	31
Fresh headed and gutted/peeled	1	2	1	–	0	–
Frozen whole	1	1	2	–	1	–
Frozen fillet/cutlet	6	3	9	–	7	1
Frozen headed and gutted/peeled	0	–	–	–	0	2
Fresh prepared ready to cook	2	8	2	–	2	2
Frozen packaged/ready to cook	6	–	4	–	10	1
Smoked	1	1	1	–	2	3
Canned	36	2	2	2	61	5
Glass bottle	0	–	–	–	1	1
Cooked fillet	10	–	–	97	0	3
Other (specify)	2	3	1	–	1	17
Don't know	0	–	–	1	–	6
PREPARATION						
Cooked and served	66	89	83	10	67	66
Bought to eat in-home	34	11	17	90	33	34

Base: Occasions fish or seafood bought or obtained for in-home consumption- n=626 households who bought from n=763 outlets – weighted by household structure.

Q14: In what form was the fish/seafood bought?

Q12a: Was the meal cooked and served by you (or someone else in your household), or did you (or someone else) buy cooked fish or seafood to eat in the home?

The following table shows that canned products were the most common form in which fish was bought accounting for 36% of all in-home occasions in which fish/seafood was eaten in the last week. Fresh fillets/cutlets accounted for one in four (25%) fish products consumed in-home and well behind were fresh whole fish (9%) and cooked fillets (10%). Flake was most often bought cooked to eat in-home (67%), but was not exclusively the only fish species bought this way. Half (50%) of hake purchases were frozen packaged and ready to cook.

Table 4.2.6c Species Consumed by Form Bought (In Home) (%)

	Total	Flake	Flathead	Blue Grenadier	Hake*	Salmon	Salmon - canned	Trevally*	Tuna - canned	Whiting	Pilchards/ Sardines - canned*	Fish fillet/ white fish	Prawns	Fish Fingers*
Fish Species	932	124	38	35	30	34	59	26	185	32	21	60	46	20
Weighted Species ('000)	1345	145	49	60	39	38	100	32	322	46	35	88	55	24
Fresh whole	9	1	22	–	–	2	–	18	1	10	–	8	52	–
Fresh fillet/cutlet	25	22	71	80	14	84	–	67	1	44	–	33	9	–
Fresh headed and gutted/peeled	1	–	4	–	–	–	–	–	–	–	–	–	7	–
Frozen whole	1	–	–	–	–	–	–	–	–	–	–	1	4	–
Frozen fillet/cutlet	6	5	5	2	30	13	–	–	–	31	–	15	–	–
Frozen headed and gutted/peeled	0	–	–	–	–	–	–	–	–	–	–	1	5	–
Fresh prepared ready to cook	3	1	–	2	2	–	–	–	–	–	–	2	7	–
Frozen packaged/ready to cook	6	5	–	–	50	–	–	–	–	–	–	20	7	100
Smoked	1	–	–	–	–	–	–	–	–	–	–	1	–	–
Canned	36	–	–	–	–	12	100	–	100	–	100	9	6	–
Glass bottle	0	–	–	–	–	–	–	–	–	–	–	1	–	–
Cooked fillet	10	67	–	18	7	–	–	14	0	15	–	9	–	–
Other (specify)	3	–	–	–	–	–	–	–	–	–	–	6	9	–
Don't know	0	–	1	–	–	–	–	–	–	–	–	–	5	–

* Caution low sample base.

Base: Fish species bought for each occasion weighted by household structure.

Q13: What type (species) of fish/seafood was that? Q14 In what form was the fish/seafood bought?

4.2.6.3 Preparation Methods of Fish/Seafood for In Home Consumption

Fish/seafood bought to be eaten in-home was most often eaten straight, that is, as it was bought, and accounted for 21% of preparation methods reported by in-home respondents who served fish/seafood in the home in the last week. This was followed by pan frying (16%), used as an ingredient (13% in total), baked in oven (12%), grilled (11%) and deep fried (11% combined at home and bought out-of-home).

- Most commonly those who used the fish/seafood straight bought a canned product (83%) and similarly for those who used the fish/seafood as an ingredient (69%).
- Close to three in five of those who grilled (55%), deep fried (57%), pan fried (57%) and steamed (57%) used a fresh fillet/cutlet.
- Baked in the oven was popular with frozen packaged/ready to cook meals (33%), followed by the use of a fresh fillet/cutlet (24%).

These same results can be analysed by looking at the form bought and how it was prepared.

- Pan frying was most often the cooking method of **fresh fillets/cutlets**, with over one in three (36%) in-home respondents preparing in this way. This was followed by grilling (24%), baking in the oven (12%), deep frying (11%), using as an ingredient (6%) and steaming (5%). Other preparation methods were each mentioned by less than 5% of in-home respondents: microwave (1%); straight/raw (2%); and barbeque (2%). Even **fresh whole fish/seafood** was more often pan fried (24%) than any other cooking method – baked in oven (16%), deep fried (13%), grilled (12%), ingredient (11%) and steamed (10%).
- Over half (54%) of **canned products** were used straight/raw and another quarter (25%) were used as an ingredient.
- **Cooked fillets** were more commonly bought deep fried (66%) than grilled (21%).
- **Frozen packaged ready to cook products** were baked in the oven on three in five (61%) occasions, followed at a distance by pan frying (13%) and grilling (12%).

A comparison of the 1991 results reveals that little has changed in the in-home preparation of fish and seafood. For example in 1991, fresh fillets were more often pan fried (37%) than any other method – grilled (24%), deep fried (10%), steamed (7%), baked in oven (6%) and microwave (6%).

Fresh whole fish was also more often pan fried (26%) than grilled (18%) or oven baked (13%). Cooked fillets were more often bought deep fried (69%) than grilled (24%). Frozen packaged products were baked in the oven on two in five occasions (37%), followed by pan fried (28%) and grilled (14%).

Table 4.2.6d – Prepared Method by Form Bought (%)

	Total	Baked/ oven	Grilled	Deep Fried at Home	Deep Fried Bought out of home	Steamed*	Raw*	Straight (as bought)	Pan Fried	Ingredient – casserole	Ingredient – other
Preparation Methods	868	110	101	46	66	23	20	144	138	32	65
Weighted Preparation ('000)	1325	158	143	63	89	32	47	278	208	37	110
Fresh whole	9	11	9	23	–	36	14	2	13	9	5
Fresh fillet/cutlet	25	24	55	57	2	57	8	1	57	16	11
Fresh headed and gutted/peeled	1	–	1	–	–	–	–	–	1	2	2
Frozen whole	1	1	1	1	–	–	–	0	2	–	–
Frozen fillet/cutlet	6	18	7	1	–	3	–	–	12	–	–
Frozen headed and gutted/peeled	0	–	–	–	–	3	–	–	0	–	–
Fresh prepared ready to cook	2	–	–	4	–	7	5	2	2	5	4
Frozen packaged/ready to cook	6	33	7	8	–	–	–	0	5	–	–
Smoked	1	–	–	–	–	–	6	1	2	–	1
Canned	36	11	2	1	–	6	64	83	7	67	76
Glass bottle	0	–	–	–	–	–	2	1	–	–	–
Cooked fillet	10	2	20	2	97	–	2	5	–	–	–
Other (specify)	2	1	–	3	1	–	6	4	0	–	4
Don't know	0	0	–	–	–	–	–	1	0	–	–
Preparation Method	100	12	11	5	7	2	4	21	16-	3#	8#

* Caution low sample base.

Total ingredients equates to 13% of occasions in which fish/seafood prepared and canned represents 69% of the form bought.

Base: Preparation methods for each occasion weighted by household structure.

Q14: In what form was the fish/seafood bought?

Q16: How was this fish/seafood cooked or prepared?

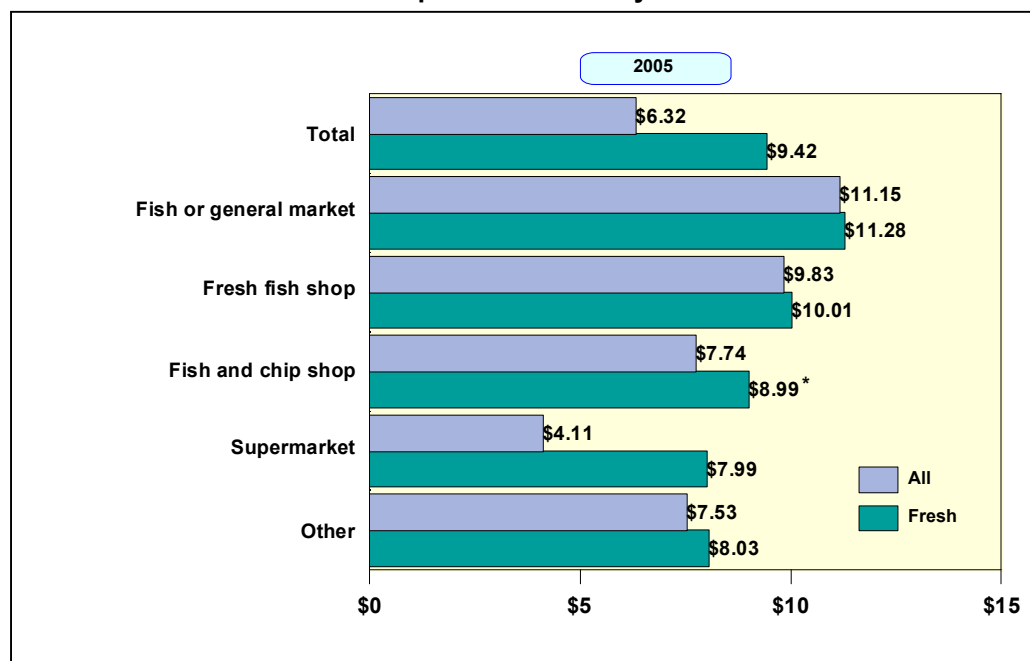
4.2.6.4 Value of Fish/Seafood Products

In-home respondents who indicated that fish/seafood had been eaten in-home in the last week were asked to provide details of the price paid for each fish/seafood occasion. Based on those who provided this information:

- In the week each fish/seafood eating household spent, on average, \$10.50 across all fish/seafood products and \$12.61 for fresh fish/seafood; and
- By occasion, an average of \$6.32 was spent for all fish/seafood products and \$9.42 for fresh fish/seafood.

Using these averages, it is possible to develop broad estimates of the value of fish/seafood eaten in the home. If each of the 739,000 households in the last week spent an average of \$10.50, this equates to close to \$7.8 million on **all** fish/seafood in the last week, or close to \$400 million in a year while if each of the 413,000 eating **fresh** fish/seafood in the last week spent an average of \$12.61, this equates to around \$5.2 million in the last week, or close to \$270 million in a year. The average value spent for each in-home occasion was lowest for products bought through supermarkets, both for all fish/seafood (\$4.11) and fresh fish/seafood (\$7.99), and highest at fish or general markets - fresh fish/seafood (\$11.28).

Chart 4.2.6.4 – Average Value of Fish/Seafood Bought for Each In-Home Consumption Occasion by Location of Purchase



* Caution: Small Sample Base

Base: Respondents (households) in which fish/seafood eaten in-home in last week and provided total price for occasion weighted by household structure:

- all fish/seafood (n=538; N=1,058,000 occasions)
- fresh fish/seafood* (n=292; N=463,000 occasions)
- * Fresh fish includes all fresh fish/seafood, frozen (unprocessed), fillets/whole fish and fresh prepared ready to cook

4.2.7 Attribute Rating of Fish/Seafood Purchasing Outlets

Respondents who had bought fresh fish/seafood in the last week were asked to rate 12 statements (on a scale of 1 *not at all important* to 7 *very important*), in their decision to buy fresh or frozen fish or seafood from a particular outlet.

Of **greatest importance** was that the *outlet or store is clean*. Almost all respondents (96%) rated this as very important (top two codes), with an average rating of 6.8 out of 7. There were no notable differences in this rating by respondent or household characteristics.

Over three in four respondents rated three statements as very important:

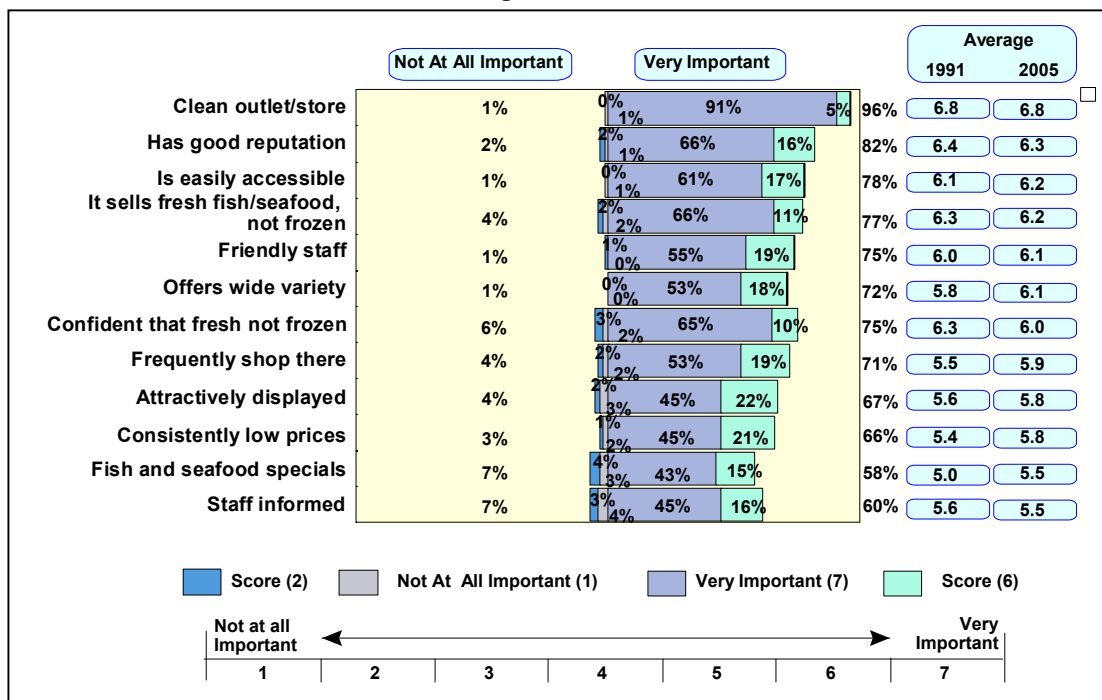
- *Has a good reputation for quality fish and seafood* (82%, 6.3 average rating) – and was particularly important to those with a household income of \$25,000 to \$40,000 (6.8);
- *Is easily accessible to me* (78%, 6.2 average rating); and
- *It sells fresh fish and seafood (i.e. not frozen)* (77%, 6.2 average rating) – and was particularly important to those with a household income of \$25,000 to \$40,000 (6.7).

Having *friendly staff working there* was deemed more important than *staff being informed about fish and seafood* (75% and 60% respectively).

Another four statements received an average rating between 6.1 and 5.8: *offers a wide variety of fish and seafood products* (72%, 6.1); *I can be confident that fresh fish or seafood has not been frozen* (75%, 6.0); *I frequently shop there* (71%, 5.9); and *has attractively displayed fish and seafood* (67%, 5.8).

Price was among the lower rated factors of importance when **selecting a fresh fish outlet**: *has consistently low prices for fish and seafood* (66%, 5.8) and *offers fish and seafood specials* (58%, 5.5). However, price factors were, on average, more important to households with an income of \$25,000 to \$40,000 (6.1 and 5.9 respectively) compared to those earning more than \$80,000 (5.5 and 5.1 respectively).

Chart 4.2.7 – Factors Affecting the Selection of Fish/Seafood Outlets



Base: Respondents who had bought fresh fish or frozen fish/seafood from a fish or general market, fish shop, fish and chip shop or supermarket in the last week weighted by household structure (n=400, N=467,000).

Q18a: You mentioned that you last bought fresh or frozen fish from a [READ OUT OUTLET FROM LAST OCCASION]. On a scale of 1 to 7, how important is [READ OUT FIRST ROTATED STATEMENT] when you buy fresh or frozen fish or seafood from that type of outlet?

Since 1991, there has been very little change in the importance of factors affecting the selection of fish/seafood outlets. Of greatest importance in 1991 was that *outlet or store is clean* (6.8) and *price* was among the lower rated factors of importance, although it has increased in importance since 1991. Three factors were rated as very important (top two codes) by close to 10% more in 2005 than 1991: *I frequently shop there* (62% in 1991 to 71% in 2005); *has consistently low prices for fish and seafood* (56% to 66%); and *offers fish and seafood specials* (48% to 58%).

The accompanying table shows the average importance rating of these same 12 statements by the outlet at which respondents last bought their fresh or frozen fish. In general, it was more important for fish or general markets and retail fish shops than fish and chip/takeaway and supermarkets to: *have a good reputation for quality fish and seafood*; *sell fresh fish and seafood (not frozen)*; *offer a wide variety of fish and seafood products*; *have confidence that fresh fish and seafood has not been frozen*; *have attractively displayed fish and seafood*; *offer fish and seafood specials*; and *have staff informed about fish and seafood*.

Being easily accessible to me did not appear in the top five for fish or general markets and retail fish shops yet was the second most important factor when buying from a supermarket/food store (behind *a clean outlet/store*).

Table 4.2.7 – Rating of Factors Affecting the Selection of Fish/Seafood Outlets (average scores)

	Total	Fish or General Market	Retail Fish Shop	Fish and Chip Shop/ Takeaway	Supermarket /Food Store
Respondents	400	82	75	48	194
Weighted Respondents ('000)	467	95	92	57	223
Clean outlet/store	6.8	6.9	6.9	6.9	6.7
Has good reputation for quality fish/seafood	6.3	6.6	6.5	6.4	6.1
Is easily accessible to me	6.2	6.0	6.0	6.2	6.4
It sells fresh fish and seafood (i.e. not frozen)	6.2	6.5	6.6	6.2	5.8
Has friendly staff working there	6.1	6.2	6.4	5.9	6.0
Offers a wide variety of fish and seafood products	6.1	6.5	6.3	5.5	5.9
I can be confident that fresh fish or seafood has not been frozen	6.0	6.4	6.5	6.4	5.7
I frequently shop there	5.9	6.2	6.0	5.1	6.0
Has attractively displayed fish and seafood	5.8	6.1	6.2	5.3	5.6
Has consistently low prices for fish and seafood	5.8	5.8	5.8	5.4	5.9
Offers fish and seafood specials	5.5	5.4	5.5	4.7	5.7
Has staff informed about fish and seafood	5.5	6.2	6.0	5.2	5.1

Base: Respondents who had bought fresh or frozen fish/seafood from a fish or general market, fish shop, fish and chip shop or supermarket in the last week weighted by household structure (n=400; N=467,000).

Q18a: You mentioned that you last bought fresh or frozen fish from a [READ OUT OUTLET FROM LAST OCCASION]. On a scale of 1 to 7, how important is [READ OUT FIRST ROTATED STATEMENT] when you buy fresh or frozen fish or seafood from that type of outlet?

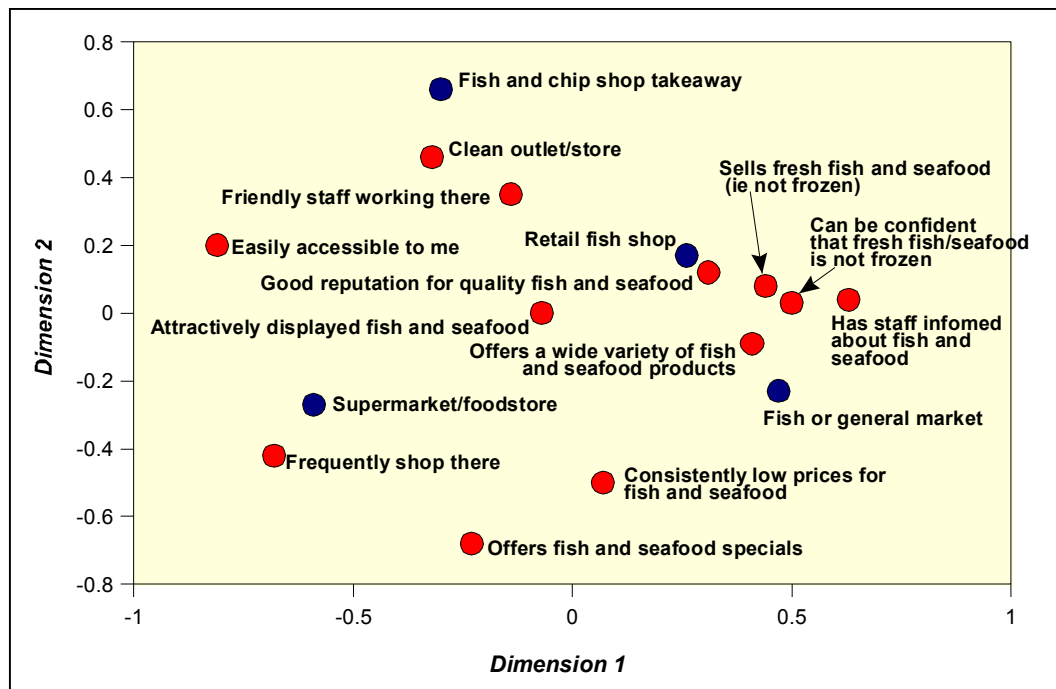
Using the same 12 statements, respondents who had bought fresh fish/seafood in the last week were asked to indicate to which particular outlets (fish or general market, retail fish shop, fish and chip shop and supermarket/food store) each statement applied. The results for each outlet are presented in a correspondence matrix that shows, in a two dimensional space, the level of association between the statements and the outlets.

In relative terms, **retail fish shops** and **fish and general markets** were most closely aligned and shared the common attributes of: *selling fresh fish and seafood (i.e. not frozen); have staff informed about fish and seafood; offer a wide variety of fish and seafood products; have a good reputation for quality fish and seafood; and I can be confident that fresh fish or seafood has not been frozen.*

However, they also differed on a number of statements. Retail fish shops were also perceived to have a *clean outlet/store*, *attractively displayed fish and seafood* and *friendly staff working there*. In contrast, fish or general markets were relatively more frequently associated with *consistently low prices for fish and seafood* and *offering fish and seafood specials*.

Fish and chip/takeaway outlets were perceived, in relative terms as being *clean*, *easily accessible* and *having friendly staff working there*. **Supermarket/food stores** also shared the association with *clean*. Like retail fish shops, supermarkets were seen to *have attractively displayed fish and seafood*, and similarly to fish markets have *consistently low prices for fish and seafood* and *offer fish and seafood specials*. Supermarkets were seen as *easily accessible* and a *place people frequently shop*.

Matrix 4.2.7 – Association Between Fish Outlet and Selection Statements



4.2.8 Alternative Meal Choice When Desired Species Not Available

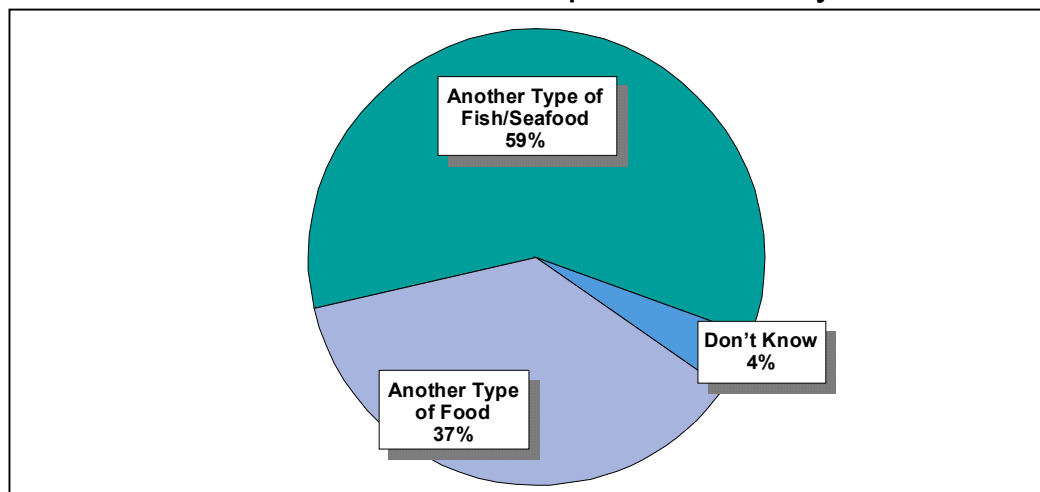
When choosing a fish, three in four (74%) considered it important that the fish is the species they want (Refer to Section 4.2.3). However, given unavailability of that species, more in-home respondents would substitute another fish or seafood species rather than eat another type of food. Even so, given the unavailability of a certain species, a reasonably high proportion of buyers (37%) would move out of the category altogether.

- Three in five (59%) respondents who had bought fish/seafood in the last week considered that if the type that they last ate was not available they would choose another type of fish/seafood; and
- Two in five (37%) respondents would have eaten another type of food at that last meal occasion.

There were no notable differences by respondent or household characteristics.

There has been no marked change in the response to the unavailability of a particular species since 1991 by Melbourne residents: 56% would have chosen another type of fish/seafood; 39% would have eaten another type of food; and 5% were uncertain.

Chart 4.2.8 – Reaction to Species Unavailability



Base: All respondents who ate fish/seafood in the last week weighted by household structure (n=626; N=739,000).

Q18d: If the fish/seafood that you ate in-home on [LAST MEAL OCCASION] was not available, what would you have eaten instead.

A similar response was given by Sydney residents in 1999: 57% would choose another fish/seafood; 37% would have chosen another type of food; and 6% were uncertain. In contrast, Perth residents in 1999 were less likely to choose another fish/seafood: 45% would select another species; 50% would choose another food; and 5% did not know.

4.2.9 Species Habitat

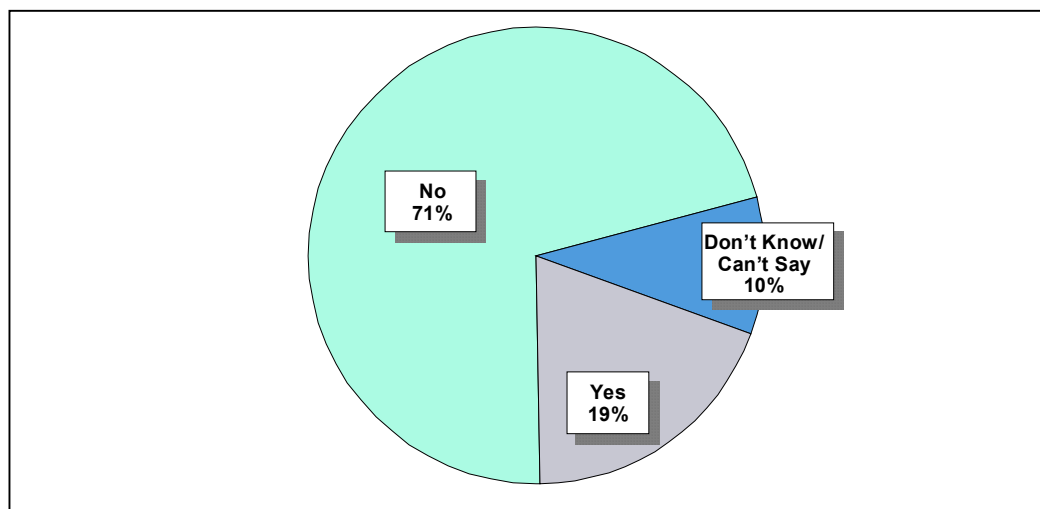
The vast majority of in-home respondents do not consider species habitat in the purchase decision:

- Seven in ten respondents (71%) would not consider whether a fish came from its natural habitat or was farmed when purchasing fish or seafood;
- One in five (19%) would consider species habitat in the purchase decision; and
- One in ten (10%) could not say if it would influence their decision.

There were no notable differences by respondent or household characteristics.

Virtually identical results were found in 1991: 74% would not consider the habitat of the fish/seafood in the purchase decision; 16% would factor this into their decision; and 10% did not know if this would make any difference.

Chart 4.2.9 – Habit Effect on Purchase Decisions



Base: All respondents weighted by household structure (n=1,005; N=1,191,000).

Q25: Some species of fish come from their natural habitat, others are farmed. Does this make any difference when you purchase fish or seafood?

A similar response was given by Sydney residents in 1999: 73% would not consider species habitat in the purchase decision; 16% would and 11% could not say if it would influence their decision. With Perth residents in 1999: 80% would not consider species habitat; 10% would; and 9% could not say if it would influence their purchase decision.

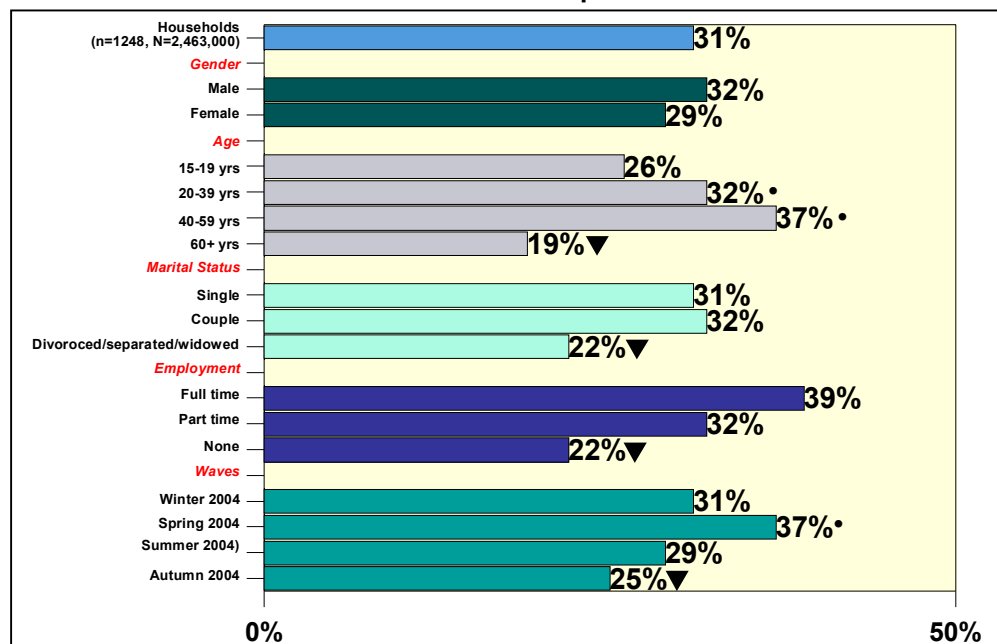
4.3 Out of Home Fish/Seafood Consumption

4.3.1 Incidence of Fish/Seafood Consumption Out of Home

Out-of-home respondents (aged 15 or more years) were presented with a series of questions which established for each day in the week preceding the survey if they had eaten breakfast, lunch or dinner, in-home, out-of-home, or they did not eat at this meal occasion. For each meal eaten, they were then asked whether any type of fish or seafood was eaten. Further questioning then established if they had eaten any type of fish or seafood out-of-home at any other time during the week.

Overall, **three in ten (31%) adult Melbournians had eaten fish or seafood out-of-home in the last week.** This was lower than the incidence of in-home consumption (51% of all Melbournians). There were notable differences in out-of-home consumption by respondent characteristics:

- Those aged 60 years or more were less likely to have eaten fish/seafood out-of-home in the last week (19%) – particularly when compared to 40 to 59 year olds (37%) and 20 to 39 year olds (32%);
- Fewer divorced/separated/widowed Melbournians had eaten fish/seafood out-of-home in the last week (22%);
- Fewer Melbournians who were not in paid employment had eaten fish/seafood out-of-home in the last week (22%); and
- Out-of-home consumption of fish or seafood was higher during spring (37%) –than autumn (25%). The incidence of in-home consumption was also lower in autumn (58%), but not significantly higher in spring.

Chart 4.3 – Incidence of Fish/Seafood Consumption Out-of-Home in the Last Week

Base: Out-of-home respondents weighted by adult population (15 or more years) in Melbourne (n=1,248; N=2463,000)

▼ ▲ Denotes significant differences within each group

4.3.2 Fish/Seafood Meals Eaten Out of Home

Out-of-home respondents who indicated that they had eaten fish/seafood out-of-home in the last week (31% of respondents) were asked for each occasion to indicate the place where they bought or ate the fish/seafood and whether purchased as a main meal or entrée/snack.

On average, it is estimated that each out-of-home fish/seafood meal weighed 170 grams, with fish meals weighing more than seafood meals (178.5 and 133.1 respectively).

The **vast majority of occasions in which fish/seafood had been eaten out-of-home were as a main meal (85%)**. Fish was more commonly bought than seafood for a main meal (88% and 76% respectively) and conversely, seafood was more commonly bought for an entrée than fish (24% and 6% respectively). Looking at this the other way:

- Of main fish/seafood meals eaten out-of-home in the last week, 74% were fish, 18% seafood and 9% a combination of fish/seafood; and
- Of fish/seafood entrée/snacks, 40% were fish, 43% seafood and 17% a combination of fish/seafood.

Table 4.3.2a – Fish and Seafood Consumption by Location
(Out of Home) (%)

	Total	Fish	Seafood	Combination (Seafood/fish)
Occasions	443	281	107	54
Weighted Occasions ('000)	1261	894	250	116
Type of Meal				
Entrée/snack	11	6	24	20
Main	85	88	76	80
No response	4	6	1	–
Place Where Bought/Ate Seafood				
Restaurant	29	20	56	39
Work cafeteria	17	24	4	–
Fish and chip shop	8	11	2	2
Fast food outlet/take-away	8	5	6	30
Friends/relatives house	8	7	13	3
Hotel	5	4	5	10
Coffee lounge/café	5	5	2	7
Function centre	2	1	4	5
Club	2	2	4	–
Sandwich/milk bar	1	2	–	–
Other	11	14	4	–
No response	4	5	–	2
Average weight (in grams)	170.1	178.5	133.1	186.5

Base: Occasions fish/seafood eaten out-of-home in last week (and data provided) weighted by adult population in Melbourne

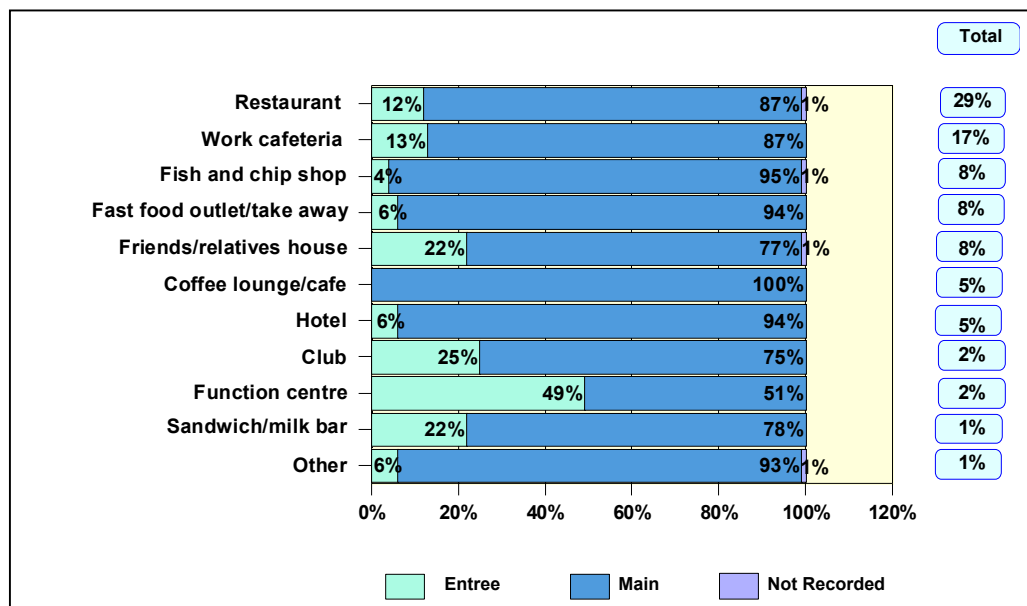
Q5/Q19b Was this for an entrée or main meal?

Q4/Q19a Where did you purchase or eat fish/seafood for (occasion)?

The **highest proportion of out-of-home fish/seafood consumption occasions was in restaurants (29%)**. Of the out-of-home meals eaten in restaurants, 49% involved fish, 39% seafood and 13% a combination of fish/seafood and most were a main meal (87%) rather than entrée/snack (12%). This was followed in incidence by the work cafeteria (17% - 95% of which were fish rather than seafood meals); fish and chip shops (8%) and fast food and takeaway outlets (8%). Just under one in ten (8%) out-of-home occasions in which fish/seafood had been eaten were at a friend/relative's house.

Overall, 11% of all fish/seafood meals served out-of-home were an entrée/snack. However, there was a disproportionately high incidence of fish/seafood entrees/snacks served at function centres (49% of all fish/seafood meals served in function centres), followed at a distance by clubs (25%), friends/relatives house (22%) and sandwich/milk bars (22%).

Chart 4.3.2 – Location of Purchase



Base: Occasions and location fish/seafood eaten out-of-home in last week (and data provided) weighted by adult population in Melbourne

Q5/Q19b Was this for an entrée or main meal?

The results for Melbourne, Sydney and Perth indicate restaurants to be the most popular locations for eating fish/seafood out-of-home (29%, 28% and 39% respectively), although they have declined in each city since 1991. In Melbourne, the work cafeteria (17%) was the next most frequent place for consumption (increasing from 10% in 1991), but was well behind in the other two cities. Clubs feature more prominently in Sydney (14%) than any other city. Close to one in ten out-of-home consumption occasions were actually at a friend's or relative's house but the incidence has declined in the three cities since 1991.

Table 4.3.2b – Location of Consumption Occasions by Survey Year (%)

	Melbourne		Sydney		Perth	
	1991	2005	1991	1999	1991	1999
Restaurant	39	29	38	28	53	39
Work cafeteria	10	17	8	4	12	9
Fast food outlet	8	8	6	12	1	5
Fish and chip shop	9	8	5	10	4	10
Friends/family house	10	8	14	10	17	12
Coffee lounge/café	1	5	2	3	2	1
Hotel	1	5	2	2	2	6
Club	1	2	9	14	4	1
Function centre	0	2	1	3	–	2
Sandwich/milk bar	1	1	3	5	N/A	N/A
Other	18	11	10	9	5	15

Base: Occasions fish/seafood eaten out-of-home in last

Out-of-home fish/seafood consumption occasions (n=590, N=1,263,000) increased over the week and **peaked on Friday and Saturday**: Monday accounted for 11% of out-of-home fish/seafood eating occasions; Tuesday and Wednesday each for 12%; Thursday for 14%; Friday for 18%; Saturday for 17% and Sunday for 14% of out-of-home fish/seafood consumption occasions.

There were notable differences as to the fish/seafood meal type eaten each day of the week:

- Weekdays fish/seafood meals (Monday to Thursday) were most commonly a main lunch – close to three in five fish/seafood out-of-home consumption occasions;
- Friday and Saturday fish/seafood meals were most often a main dinner (close to half of the fish/seafood out-of-home meals), followed by a main lunch (40% Friday and 25% Saturday);
- Dinner entrees peaked on Saturday (9%) and Sunday (7%).

Table 4.2.3c – Meal Type by Day of Week (%)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Respondents	66	72	71	84	104	107	79
Weighted Respondents ('000)	137	151	147	178	227	216	171
Breakfast	–	1	2	2	–	1	1
Lunch Entrée	3	6	3	2	4	5	5
Lunch Main	59	65	62	61	40	25	39
Dinner Entrée	2	3	4	5	2	9	7
Dinner Main	26	24	25	22	47	53	43
Other time of day	4	–	3	5	4	2	3

Base: Occasions fish/seafood eaten out-of-home in the last week weighted by adult population in Melbourne (n=590; N=1,263,000)

4.3.3 Type of Fish/Seafood Consumed Out of Home

As previously mentioned, 31% of Melbournians (aged 15 years or more) had eaten fish/seafood out-of-home in the last week – 23% had eaten fish, 9% seafood and 3% ate a combination of fish and seafood at the occasion. On average, out-of-home fish meals weighed more than seafood meals (178.5 grams and 133.1 grams respectively).

- There were no differences between males and females in terms of out-of-home consumption.
- Those aged 60 years or more were less likely than those 20 to 39 years and 40 to 59 years to have eaten fish, seafood and a combination of fish/seafood in the last week.
- Those not in paid employment were less likely to have eaten fish and seafood out-of-home in the last week.
- A higher proportion of Melbournians had eaten fish during spring than summer or autumn, however, there was no difference in the incidence of seafood consumption out-of-home by season.

The most commonly eaten species out-of-home were flake (6%), canned tuna (5%), prawns (5%), salmon (4%), fish fillet/white fish (3%), squid/calamari (2%) and fisherman's basket (2%).

- Flake was more often eaten by younger (14%, 15 to 19 years and 7%, 20 to 39 years) than older people out-of-home;
- Canned tuna consumption was highest among 40 to 59 year olds (9%), followed by 20 to 39 year olds (6%) and among full time workers (10%);
- Prawns were less likely to be eaten out-of-home by those not in paid employment (2%);
- Salmon was more frequently eaten by full time workers (6%);
- Fish fillet/white fish consumption was highest among those not working (5%); and
- Squid/calamari was more often eaten by those aged 40 to 59 years (3%).

The most common types to be ordered at a restaurant were prawns (23%), salmon (12%), squid/calamari (8%), scallops (7%), flake (7%), whiting (5%) and oysters (5%). Over half of work cafeteria out-of-home meal occasions consisted of canned tuna (55%) and flake dominated the purchases from fish and chip shops (69%). Smoked salmon was most commonly consumed at a coffee lounge.

Table 4.3.3a – Type of Consumption (Out of Home) (%)

	Total	Gender		Age Group				Employment		
		Male (A)	Female (B)	15 – 19 (C)	20 – 39 (D)	40 – 59 (E)	60+ (F)	Full-time (G)	Part-time (H)	None (I)
Respondents	1248	374	874	54	444	480	268	424	268	550
Weighted Respondents ('000)	2463	1167	1296	199	871	854	538	955	454	1039
Fish	23	24	23	24	23 ^F	28 ^F	16	29 ^I	25	18
Seafood	9	10	9	8	11 ^F	10 ^F	5	13 ^I	14 ^I	4
Combination (Seafood/fish)	3	3	3	–	4 ^F	5 ^F	1	5	3	2
Did not eat in last week	69	68	71	74	68	63	81	61	68	78

Table 4.3.3a – Type of Consumption (Out of Home) (%)cont...

	Total	Wave				Average Weight Consumed (grams)
		Wave 1 (Winter 04) (O)	Wave 2 (Spring 04) (P)	Wave 3 (Summer 05) (Q)	Wave 3 (Autumn 05) (R)	
Respondents	1248	315	333	310	290	
Weighted Respondents ('000)	2463	637	656	609	561	
Fish	23	23	29 ^{Q R}	21	19	178.5
Seafood	9	10	9	11	7	133.1
Combination (Seafood/fish)	3	4	4	4	2	186.5
Did not eat in last week	69	69	63	71	75	

Base: All out-of-home respondents weighted by adult population in Melbourne (n=1,248; N=2,463,000)

Table 4.3.3b – Type of Fish/Seafood Consumed Out-of-Home (%) by Demographic Group

Species with at least 1% mention	Total	Male (A)	Female (B)	15–19 (C)	20–39 (D)	40–59 (E)	60+ (F)	Full-time (G)	Part-time (H)	None (I)
All Respondents	1248	374	874	54	444	480	268	424	268	550
Wtd Resp ('000)	2463	1167	1296	199	871	854	538	955	454	1039
Flake	6	6	5	14 ^{E F}	7 ^F	4	3	5	6	6
Flathead	1	1	0	–	1	1	1	1	1	–
Hake	1	1	0	–	0 ^F	1	2	1	0	0
Salmon	4	4	3	–	3	5	3	6 ^I	3	2
Salmon, canned	1	1	0	–	0	2	1	2	1	0
Salmon, smoked	1	0	1	–	0	1	0	1	2	–
Snapper	1	1	0	–	1	1	1	1	–	1
Trevally	1	1	0	–	–	1	0	1	1	0
Tuna	1	0	1 ^A	2	1	1	–	1	2 ^I	0
Tuna, canned	5	6	5	2	6 ^F	9 ^F	1	10 ^{H I}	5 ^I	1
Whiting	2	1	2	2	1	3	1	2	2	2
Fish fillet/white fish/not specified	3	4	3	7	2	3	4	2	4	5 ^G
NET FISH	23	24	23	24	23^F	28^F	16	29^I	25	18
Crab	1	1	1	4 ^D	0	1	–	1	2 ^I	0
Mussels	1	1	1	–	1	1	–	1	1	0
Oysters	1	2	1	–	2	1	1	2	1	1
Prawns	5	5	5	6	4	6	3	7 ^I	6 ^I	2
Scallops	1	2	1	–	2	2	1	2	2	1
Squid/Calamari	2	1	2	–	2	3 ^F	0	2	4 ^I	1
NET SEAFOOD	9	10	9	8	11^F	10^F	5	13^I	14^I	4
Marinara mix	1	1	1	–	1	1	0	1	0	0
Sushi	1	–	1	–	1	0	–	1	1	–
Fishermans Basket/mixed seafood	2	2	1	–	1	4	–	3	1	1
NET COMBINATION SEAFOOD/FISH	3	3	3	–	4^F	5^F	1	5	3	2
Have not consumed fish outside of home	69	68	71	74	68	63	81 ^{D E}	61	68	78 ^{G H}

Base: All out-of-home respondents weighted by adult population in Melbourne (n=1,248; N=2,463,000)

Table 4.3.3c – Location of Species Purchased (%)

	Total	Work Cafeteria	Restaurant	Function Centre	Club	Hotel	Coffee Lounge	Fish and Chip Shop	Fast Food Outlet/ Take Away	Sandwich/ Milk Bar	Friends/ Relatives House	Other
Location	468	59	145	13	12	31	24	39	43	6	49	38
Weighted Locations ('000)	1261	221	364	27	26*	63	60	105	95	16*	95	136
Anchovy	1	–	0	19	–	–	–	–	–	–	3	–
Barramundi	1	–	2	–	–	–	6	–	–	–	–	–
Flake	12	2	7	6	16	9	5	69	18	–	13	–
Flathead	1	–	1	14	11	6	–	3	–	–	–	–
Grenadier, Blue	1	1	0	–	–	2	–	3	–	–	–	–
Hake	2	1	1	–	–	–	–	–	–	–	–	–
Perch	1	–	1	–	–	4	–	–	–	–	–	–
Salmon	8	8	12	24	6	2	9	0	4	40	4	11
Salmon, canned	4	14	–	–	–	–	9	–	–	0	4	3
Salmon, smoked	2	1	0	–	–	–	16	–	–	9	4	–
Snapper	2	–	4	–	–	–	–	–	–	–	2	7
Trevally	1	–	1	–	–	7	2	–	–	–	3	–
Tuna	2	5	1	–	–	–	2	–	3	–	5	4
Tuna, canned	19	55	0	–	–	–	19	–	8	52	10	55
Whiting	4	–	5	–	6	11	–	10	1	–	3	2
Hake	1	1	1	–	6	–	–	–	–	–	3	–
Pilchards/sardines (canned)	1	5	–	–	–	–	–	–	–	–	–	5
Fish fillet/white fish/not specified	9	1	8	10	12	7	5	10	7	–	11	4
NET FISH	72	96	51	59	58	62	80	93	48	100	65	91
Crab	1	1	0	–	–	–	–	–	1	–	8	3
Octopus	1	–	0	19	–	–	2	–	–	–	1	–
Oysters	2	–	5	5	12	6	–	–	1	–	2	–

Base: Location of purchase weighted by adult population in Melbourne

Q19a: Where did you purchase or eat fish/seafood for (occasion)? Q20 What type (species) of fish/seafood was that?

* Caution: small sample base

Table 4.3.3c – Location of Species Purchased (%) cont...

	Total	Work Cafeteria	Restaurant	Function Centre	Club	Hotel	Coffee Lounge	Fish and Chip Shop	Fast Food Outlet/ Take Away	Sandwich/ Milk Bar	Friends/ Relatives House	Other
Location	468	59	145	13	12	31	24	39	43	6	49	38
Weighted Locations ('000)	1261	221	364	27	26*	63	60	105	95	16*	95	136
Prawns	10	3	23	15	13	11	2	1	10	–	14	1
Scallops	3	–	7	5	–	2	5	–	–	–	3	–
Squid/Calamari	4	1	8	20	11	–	–	–	1	–	3	1
Shrimps	1	–	1	–	–	–	–	–	–	–	3	–
NET SEAFOOD	21	4	41	54	42	19	7	5	18	–	33	7
Marinara Mix	1	–	1	5	–	4	6	–	–	–	1	–
Sushi	1	–	0	–	–	–	–	–	14	–	–	1
Fishermans Basket/mixed seafood	4	–	7	–	–	14	7	3	5	–	1	1
Fillet O'Fish/McDonalds Fish	1	–	–	–	–	–	–	–	3	–	–	–
NET COMBINATION SEAFOOD/FISH	8	–	10	5	–	19	13	3	36	–	3	2

Base: Location of purchase weighted by adult population in Melbourne

Q19a: Where did you purchase or eat fish/seafood for (occasion)? Q20 What type (species) of fish/seafood was that?

4.3.4 Importance of Factors When Selecting Fish or Seafood From a Menu

All respondents were asked to rate the importance of seven factors (one factor was exclusive to out-of-home respondents and one to in-home respondents) in deciding whether they select fish or seafood from the menu at restaurants, hotels and fish and chip shops when eating out-of-home. Out-of-home respondents were asked to rate the importance for all outlets, while in-home respondents completed the question for just one outlet (the last outlet eaten at in the last week). As previously, a scale of 1 *not at all important* to 7 *very important* was used.

Of **greatest importance** was that the outlet has *clean premises*. Over nine in ten respondents (94%) rated this as very important (top two codes), with an average rating of 6.7 out of 7. An *outlet or store that is clean* was also found to be of greatest importance to buyers of fresh fish/seafood (refer to Section 4.2.7). Clean premises were ranked first for restaurants (6.8), hotels (6.7) and fish and chip shops (6.7).

Close to three in four respondents rated two statements as very important – and was similar to buyers of fresh fish/seafood when selecting an outlet for a purchase:

- ***Fresh rather than frozen fish or seafood is used*** (77%, 6.1 average rating) – and on average, was rated more important in restaurants (6.4) than fish and chip shops (5.8);
 - Out-of-home respondents gave an average rating of 5.8 out of 7 for *I can be sure that fresh fish or seafood has not been frozen* (67% very important) – and on average, was rated more important in restaurants (6.0) than fish and chip shops (5.6).
- ***Has a reputation for quality fish or seafood*** (74%, 6.1) – average rating highest for restaurants (6.2).

The four remaining factors received an average rating between 5.3 and 5.0 and were rated as very important by half or fewer respondents:

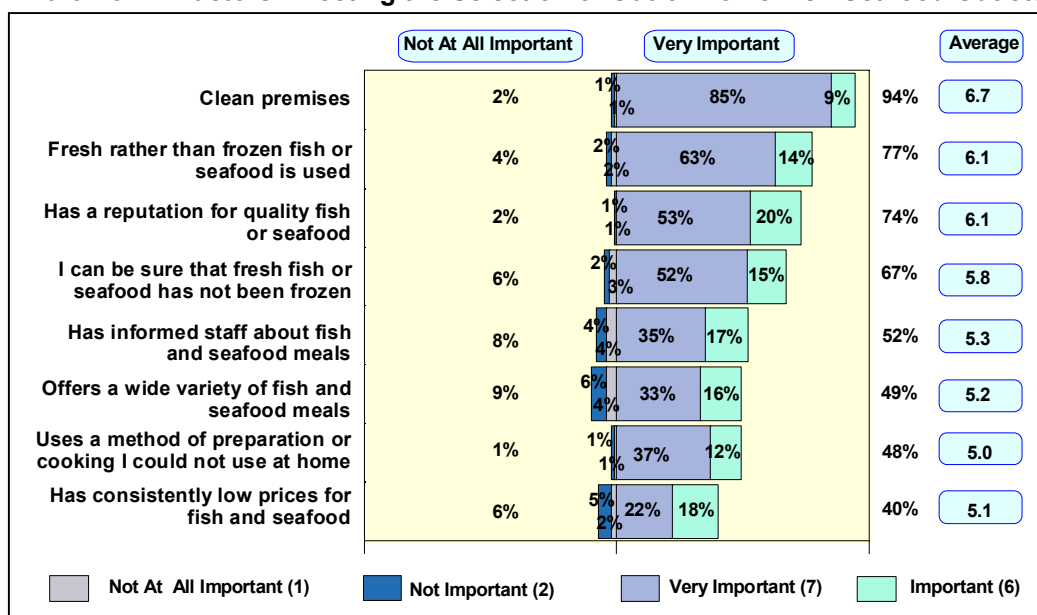
- ***Has informed staff about fish and seafood meals*** (52%, 5.3) – average rating highest for restaurants (5.5);
- ***Offers a wide variety of fish and seafood meals*** (49%, 5.2) – average rating highest for restaurants (5.3);
- ***Uses a method of preparation or cooking I could not use at home*** (48%, 5.0) – average rating highest for hotels (5.5); and
- **Of least importance** was that the outlet ***has consistently low prices for fish and seafood*** (40%, 5.1) – average rating highest for fish and chip shops (5.2).

Table 4.3.4 – Importance of Factors When Selecting Fish/Seafood From a Menu

	Total	Restaurant	Hotel	Fish and Chip Shop
All Respondents	850	330	261	259
Weighted Respondents ('000)	2119	791	664	664
Fresh rather than frozen fish or seafood is used	6.1	6.4	6.2	5.8
Has a reputation for quality fish or seafood	6.1	6.2	5.9	5.9
Has consistently low prices for fish and seafood	5.1	5.0	5.0	5.2
Has informed staff about fish and seafood meals	5.3	5.5	5.3	5.2
Offers a wide variety of fish and seafood meals	5.2	5.3	5.1	5.1
I can be sure that fresh fish or seafood has not been frozen ³	5.8	6.0	5.9	5.6
Uses a method of preparation or cooking I could not use at home ⁴	5.0	5.0	5.5	4.9
Clean premises	6.7	6.8	6.7	6.7

Base: Out-of-home respondents who provided a rating for a restaurant, hotel or fish and chip shop (n=850; N=2,119) – excludes not recorded

Q12/Q22: On a scale of 1 to 7 how important are each of the following factors in deciding whether you select fish or seafood from the menu at {OULTET} when eating out-of-home?

Chart 4.3.4 – Factors Affecting the Selection of Out-of-Home Fish/Seafood Outlets

Base: Out-of-home respondents who provided a rating for a restaurant, hotel or fish and chip shop (n=850; N=2,119) – excludes not recorded

Q12/Q22: On a scale of 1 to 7, how important are each of the following factors in deciding whether you select fish or seafood from the menu at [OUTLET] when eating out-of-home?

³ Statement only asked in Out-of-home questionnaire

⁴ Statement only asked in out-of-home component of In-home questionnaire

Part 2 – Focus Group Discussions

4.4 Discussion Group Findings

4.4.1 Current Influences on Food Purchasing Behaviour, Food Preparation and Consumption

The key influences on purchase and preparation of food for in-home consumption were:

- Preparation and clean up time;
- Value for money;
- Health (less saturated fat, more protein, a variety of fresh vegetables);
- Acceptance (meals that will please most, if not all, members of the family or household); and
- Variety in the diet.

There was a high level of interest in **quick and easy meal solutions**, such as meals that can be put together in 15-20 minutes using a combination of fresh produce (fresh meat, chicken, fish and vegetables) and shop bought sauces and condiments.

‘It’s got to be quick and fast... the time it takes to cook some rice’

‘There are so many things on the market now that help you to whip up something quick and healthy, like all the pasta and sauces’

‘Looking for shortcuts’

‘When you’ve got a life, or you’re running around after kids, you don’t have time’

‘Not starting from scratch anymore’

The search for quick/easy meals was common to all segments but especially those with children at home.

The all male group was particularly fond of meals that were easy to clean up or clean as you go such as stir fry in a wok.

Participants were inclined to eat *‘something different’* or, *‘things that we don’t cook at home’* when dining out.

Weekends were reported as the time when they were more prepared to try something different at home or to have a slow cooking dish such as a roast.

Popular dishes at home included stir-fries, pasta and sauce, curries, casseroles, salads, and grilled or barbequed meats.

There was also strong preference for **‘one pot’ meals**, such as curries, casseroles and soups that do not require a great deal of preparation or washing up. Meals that could be made in bulk on the weekend and reheated during the week were also very popular, particularly in households with working parents and/or teenage children where a ‘serve yourself’ policy prevailed.

‘I make big batches of things, and stick them in the freezer’

‘I want things you can reheat’

‘I do a big cook up on Sunday afternoon – it lasts for a few days’

‘Anything you can stick in a container and reheat’

The ready availability of **Asian cook-in sauces and condiments** in Australian supermarkets was felt to have had a major influence on cooking styles and preferences. Tasty Asian style meals using a combination of shop bought flavourings and fresh ingredients have been incorporated into many cooks’ weekday repertoire. Not only are they considered good to eat, they are quick to prepare, relatively healthy, and popular with most members of the household.

‘I try to cook with fresh veg and meat. I do lots of stir fries’

*‘I’m doing more Asian cooking these days
and avoiding the fatty, high cholesterol European foods’*

Households with younger children often catered to the ‘lowest common denominator’, by preparing a meal that will appeal to all members of the household, rather than preparing and serving up several meals. Weekends and nights when the children were not at home, were seen as opportunities to cook up something a little more special.

Microwaves have also changed eating habits as they allow for quick and easy meals where something can be heated quickly when there is no time to cook a regular meal; one young woman noted that fish was quick and easy to actually cook in a microwave.

People gravitate towards more ‘fancy’ or complicated dishes when they are dining out in a restaurant – choosing food that they do not have the time or confidence to prepare at home. Fish and seafood fanciers often opt for fish or seafood when they dine out because they are not sure how to cook it themselves.

‘I often pick fish when I go out, because I don’t really know how to cook it myself’

‘I usually order fish when I go out’

Organic and free range produce also figured highly amongst some women meal preparers. A high degree of sensitivity to animal welfare issues and chemicals used in agriculture led these consumers to choose such products.

A common theme was the search for new ideas for simple home meals, from magazines and friends and several commented that they usually simplify recipes that they extract from magazines.

4.4.2 Fish And Seafood In The Diet

Overall the perceptions about fish as a food were mostly positive and most participants enjoyed eating fish and seafoods, particularly when dining out. Seafood (vis a vis fish) was seen as something of an indulgence or a treat.

Many fish consumers reported an increase in the frequency they eat fish and seafood now compared to former years, both in-home and out-of-home. This was generally attributed to positive associations with good health.

Only a very small number reported a decline in consumption.

Consumers who reported a decrease in fish consumption commonly cited price as a constraint on their purchases, especially for fresh fish (vis a vis canned). Other unattractive features reported about preparing fish were problems with taste, smell, availability of good fish outlets, short shelf life and a reluctance of some people to clean fish or cut fish fillets and portions.

Fish and seafood has a strong and positive association with summer, festivities, and good cheer. Its image is simple, light, and relaxed. It is often a dish selected when entertaining or having a special occasion meal.

Many participants reported that the consumption of fish and seafood, particularly the latter, is greater in summer, when eating outdoors with a barbeque or when entertaining.

‘It’s more of a summer thing’

‘It’s a special treat’

‘I think of barbeques, outdoor eating, fish and chips on the beach’.

Fish was reported as being problematic for children or where there was a household member who did not like fish or had some allergic reaction to it. Butterfish was mentioned as creating a problem for some consumers [butterfish is a name commonly used in Melbourne for escolar, a fish with purgative qualities].

Fish fingers were nominated as being popular with kids and canned fish was widely reported as a regular and popular pantry item which was very useful for quick and easy meals. Indeed, canned fish was commonly reported as being used in far greater quantities these days, because of its convenience and price.

The factors which drive or constrain consumption are explored in greater detail in the following sections.

4.4.3 Factors Increasing Fish And Seafood Consumption

The adding of variety to diet (from meat and chicken) and the health enhancing properties of fish were participants’ common motivations for eating fish. Other attractions or benefits which help to make fish popular included:

- Pleasing flavour and taste;
- Some types in season were cheaper than red meat;
- Quick to cook, if you know how;
- Easy to prepare and cook;
- Versatile;
- Light and easily digestible;
- Wide variety to choose from; and
- A treat or choice for special occasions/

‘It’s a break from chicken’

‘Quick and easy in the microwave’

‘Not messy in the kitchen, no pile of pots’

‘Doesn’t fill me up’

Paradoxically, fish was also seen as difficult to prepare and cook, also expensive, when barriers to fish consumption were discussed; this paradox highlights the many interacting factors prevailing in shopping and eating decision making and the differing level of confidence consumers have with fish (Section 4.4.4 following).

Health professionals were cited as strongly advocating the consumption of fish and seafood, and most consumers believed they should be eating it at least once or twice a week.

‘There’s more awareness that fish is fairly healthy.

It’s good for the brain, good for circulation, it’s good for arthritis’.

‘There’s a saying, ‘eat things that swim if you want to stay slim’’

‘I’m trying to eat it several times a week’

The key health benefits of fish were perceived to be:

- Low in fat;
- High in protein;
- Easily digested;
- Good source of healthy oils (Omega 3); and
- Low GI (Glycaemic Index).

Fish was also seen as a ‘brain food’ because of its unique chemical composition.

4.4.4 Factors Constraining Fish /Seafood Consumption

- The greatest barrier for many consumers is that they lack confidence in buying, cooking and serving up fish and seafood.
- Whilst cooking with fish is not considered all that difficult, it is seen as unpredictable – consumers lack experience, and are uncertain how it will turn out. Many people would like to include more fish in their diet, but are overwhelmed by the selection available. They lack knowledge on what type they should buy, what they should do with it, or how quickly they need to use it.

‘I’m not so ‘au fait’ with the different varieties’

‘I never know how much to buy’

‘How do you actually cook it?’

- Another major barrier to eating fresh fish identified by participants is the **limited availability of good outlets** in Melbourne. Several consumers reported that fishmongers are few and far between in suburban shopping centres, and many expressed considerable disappointment in the range and quality of fish available at their local supermarkets.

Whilst the quantitative data show that purchase of fresh fish from supermarkets is on the rise, many people suggest they wouldn’t even consider supermarkets as an option for purchasing fresh fish and seafood for this reason.

‘You can’t buy anything from Coles or Safeway, not out our way’

‘We need a good shop nearby’

- Another significant barrier cited by participants is that **‘fish doesn’t stay fresh for very long’**. Fish that has been frozen is generally considered inferior to freshly caught fish, whilst fish that has been frozen and thawed prior to sale cannot be frozen again. This means that most people were reluctant to buy fresh fish in bulk, or more than a day or two in advance.

‘You have to buy it on the day you’re going to cook it’

‘There’s no guarantee we’ll use it in time’

‘It gets wasted if you don’t cook it up’

- It was also felt that once fish has been cooked **it needs to be served and consumed the same day**. The perception was that most dishes containing fish lose their appeal if frozen or reheated.

‘You can’t really reheat it’

The following constraints apply mainly to fresh fish, rather than tinned or frozen:

- Fish was considered to be an acquired taste. While some people love it, others can’t bear the taste and texture of fish, particularly fresh or whole fish. Hence, it is considered a risky choice for family meals and dinner parties.

‘My husband wont eat it, so the only chance I get to have it is if he’s going out’

- Whole fish and fish containing bones and skin create problems, particularly for children and fussy eaters. Many Australians are unaccustomed to eating whole fish, and find it unpalatable.

‘I can’t bear the eyes looking at you’

- Some people also find the smell of fish, both raw and cooked, more than a little overwhelming, and the unpleasant smell of some fish outlets was cited as a deterrent to buying fish.
- Whilst not all fish was considered expensive, particularly if compared with red meat, the price of some types was considered prohibitive for families. Seafood, such as prawns and scallops was generally reserved for festive occasions or special treats. Many people reflected on the price of fish and seafood compared to ten years ago.

‘Really nice fish is so expensive’

‘It has become a little unaffordable’

‘You can’t justify the expense to feed the whole family’

- There was also some concern about substitution, and that consumers have been duped by supermarkets and fish markets trying to pass off a cheap cut of thawed, imported fish, for a piece of expensive, fresh, locally caught fish. Confident cooks will often buy a whole fish, and ask for it to be filleted, to ensure that they haven't been cheated.

*‘There was a program on Today Tonight
saying that some places were selling fish under the wrong label’*

- Butterfish was mentioned in two discussion groups but there was some confusion about the identity of the fish and whether consumption was beneficial or harmful. As noted earlier, escolar, a fish commonly sold as butterfish, has purgative qualities. The confusion about fish names and the issue of economic substitution, has undermined consumer confidence in fish.
- Mercury in fish, particularly in flake (shark) was mentioned in two group discussions but it did not evoke great concern even amongst those who discussed it. Most participants had a remarkably low level of concern about water pollution, heavy metals and mercury in fish given the steady stream of media publicity on these subjects over recent times, particularly in Victoria.

4.4.5 Perceptions on Fishmongers and Supermarkets

Whilst purchase of fresh fish from supermarkets has increased considerably over the past ten years, consumers still have some reservations about buying fresh fish from their local supermarket.

‘Supermarkets really need to get their act together’

Common criticisms about supermarket fish outlets related to a lack of variety, concerns about thawing and freshness, fish substitution and lack of knowledge amongst staff.

The label ‘thawed for your convenience’ on fish in supermarkets was seen with some suspicion and derision. Questions were asked as to when it was thawed and how long had it been on display since thawing.

It was suggested that supermarkets wanting to build consumer confidence and increase fish sales could:

- Train staff better;
- Have sufficient competent staff behind the counter;

- Add more variety;
- Put related ingredients near or on the fish counter;
- Keep fish in an entirely separate counter with nothing but fish in it; and
- Cut fish fillets in full public view.

Although most participants were generally positively disposed towards fishmongers two types of constructive criticisms were made about these specialist outlets. These were that the display of some outlets was not appealing while some outlets had an unpleasant smell that was an impediment to some consumers.

Fish and chips outlets were also mentioned in the context of unpleasant smell; other comments on the fish and chips outlets was the increasing price of this once inexpensive meal and the greasiness of products sold by some of these outlets.

The fish outlets in the various markets in Melbourne received praise from many participants; the ability to handle fish and choose particular pieces from the display was cited as a particular attraction of these outlets.

4.4.6 Australian Versus Imported Fish

Fish that is caught locally and processed by Australian owned and controlled industries appealed to far more participants than fish which has been imported from overseas. There are several reasons why:

- There is a widespread assumption that fish caught in Australian waters is sold fresh (never been frozen) in markets and supermarket delis, whilst fish shipped in from overseas is frozen and thawed before sale;
- There is a general perception that fish caught locally (particularly bay and inlet areas of Victoria) tastes better because it is fresher (few days since capture);
- Many consumers also question whether fishing practices overseas (in particular Asia) are subject to the same standards of hygiene as they are in Australia; and
- There is also a belief that Australian waters are cleaner and less polluted than those elsewhere.

‘Mercury is less of a problem with Aussie fish’

And whilst most consumers had not previously considered the impact of fishing on the environment (Section 4.4.12), some were concerned about the practices of foreign fishing industries and the impact on endangered fish species.

It was also evident that participants had little or no understanding of the importance of imported fish and seafood to the Australian market.

There was an assumption that the Australian fishing industry is subject to tighter regulations and controls than other countries. Japan, for example, had a very poor reputation amongst participants when it comes to responsible fishing practices.

All other things being equal (including quality and price of the fish), most consumers would rather support Australian industries and local economies. A small number of people were prepared to pay about 10% more for Australian product but there was little support for Australian product if it was more than 10% dearer than equivalent imports.

However, whilst consumers generally do prefer to buy 'Australian' fish, there appears to be a great deal of confusion regarding the origin of fish sold in Australian fish markets and supermarkets. Consumers were both surprised and disappointed to learn that around two thirds of fish is imported.

Overall, the findings suggest that further branding and promotion of the Australian origin of fish and seafood could help to overcome the sales impediment due to the higher price of product that is locally caught and processed. However, the success of any such branding and promotion exercise would need to be based on industry reform and more reliable product labeling given the lack of trust about fish labeling that is evident today.

4.4.7 Display and Packaging of Fish

Purchasing fresh fish and seafood displayed loose (in a refrigerated cabinet or window) is clearly the preferred method for the majority of shoppers. The ability to choose fresh fish 'from the window' was perceived by most participants as the best way to ensure they received the best quality and freshest produce.

Frozen fish loose or packaged was clearly perceived as the 'poor' and rather 'unglamorous cousin' of fresh fish and seafood.

However, many felt that the range of frozen packaged fish products and meals has improved considerably over the past few years, offering a wide choice of convenient and relatively healthy meal solutions, that are popular even with fussy eaters.

‘Emergency, kid friendly food’

‘Fish fingers are great for the kids’

Fish fingers and crumbed calamari were also cited as popular frozen seafood categories, especially with children and younger family members.

4.4.8 Packaged Fresh Fish

The idea of packaging fish in a simple plastic overwrapped tray, vacuum or modified atmosphere pack (MAP) was unacceptable to consumers who only purchased fish from fishmongers or a fish market in order to get the freshest fish possible.

The main concern with sealed packaging was that the fish may have been caught and packaged well before the use by date, and would not be truly fresh.

‘I’d be pretty wary’

‘How long has it really been there?’

‘It seems less natural’

There was also a perception amongst several people that fresh fish needs to ‘breathe’ and therefore should not be sealed in a pack.

It was evident that most participants had little if any, understanding of the technological basis of and the differences between the vacuum packs, simple plastic overwraps and MAP packs of food currently available in many retail outlets. The distinction was then explained to the group by a participant or moderator where necessary.

4.4.9 Modified Atmosphere Packs

Once the shelf life benefits of modified atmosphere packaging were outlined, participants suggested that modified atmosphere packs of fresh fish could take much of the guesswork and uncertainty out of buying and preparing fresh fish, **and offer many potential benefits:**

- Extends the life of fresh fish;
- Has a clear use by date;
- Is easy to store in a fridge or freezer;

- Fixed quantities and price; and
- Avoid the smell and chaos of fish markets and queues at supermarket delis.

‘It makes it more accessible’

The John West packs of fillet portions and stir fry pieces were largely unknown and one only participant recalled seeing this in their supermarket (‘salmon fillets in the meat section of Coles’). Overall, the group response to the concept was positive but the idea of stir fry pieces was not so well received as it was seen by some as a way of getting rid of inferior quality fish.

Nevertheless there was a sentiment that if displayed near the fresh meat and chicken section of the supermarket, ready to cook fresh fillet in meal sized portions in MAP would offer a convenient alternative to meat and chicken. Participants suggested that recipe cards, cooking instructions and simple serving suggestions may help inspire people who are unsure how to cook fish. These could be attractively displayed alongside marinades, herb butters, pour on sauces, and other appetising meal solutions.

*‘I wouldn’t go out of my way to buy fish at the deli,
but it might get my attention if it was up there alongside the meat and chicken’*

4.4.10 Vacuum Packed Fish

Pre sliced vacuum packed smoked fish received high recognition for its quality, convenience, value and taste. It was commonly seen as a versatile product which is well preserved and suitable for use in appetizers or main meals.

As previously outlined the concept of fresh fish in vacuum pack was somewhat unclear and ‘new’ to consumers but seen as possibly a good idea by some participants. Many consumers have had positive experiences with vacuum packed Lamb and Beef and would consider trialing the product on the basis of the positive experiences with red meat.

It appears that if the benefits of MAP and vacuum packaging are fully explained most consumers are prepared to look at these packs in a favourable light.

4.4.11 Canned Fish

Canned fish, particularly tuna, was considered a pantry staple, and the basis of a wide variety of quick, inexpensive, tasty and nourishing meals, especially for children who were not fond of fresh fish. It was also mentioned as being particularly useful when there are unexpected visitors.

Consumption of canned fish was generally reported as increasing over recent years. The widespread availability of canned fish in supermarkets was noted by participants as a key factor contributing to the growing popularity of this category of fish products.

Whilst some people did not like the taste of fresh fish, there was wide acceptance of canned tuna. Indeed, some people **didn't look upon it in the same way as fresh fish at all. It is seen as a versatile ingredient** that is added to pasta sauces, sandwiches, dips and salads, or turned into patties and casseroles.

'A good emergency food'

'Always have a few tins in the cupboard'

'I don't eat fish, but I eat tuna'

The recent launch of a wide range of flavoured ready to eat canned tuna has been eagerly welcomed amongst some consumers. These were especially popular in packed lunch for school or work, and as a quick but substantial snack or emergency meal. Women in the older age groups however showed a preference for the non-flavoured, ready to eat cans.

Several consumers recalled particular brands such as Sealord, mainly from television commercials, while most others had little preference or brand loyalty. One young woman noted that she only ate 'dolphin friendly' canned tuna but most respondents seemed indifferent to the 'dolphin friendly' image.

Canned sardines were not so widely favoured and the response was far more polarized with people either clearly liking or disliking them. The strong taste and bones in sardines were cited as the major drawback with this product.

4.4.12 Sustainability of Fishing and Aquaculture

Unprompted discussion about the problem or consequence of overfishing and the impact of aquaculture on the marine environment was rare. Several participants did however express concern about eating orange roughy: arising from some recall of television items highlighting the longevity of the species.

‘I’m worried about deep sea perch. It’s almost been fished out, and that puts me off’

‘I will not buy Orange Roughy, because it’s endangered’

Others also queried the sustainability of shark, tuna or swordfish stocks, again based on a vague recollection of some media item.

‘I’m worried about tuna for sushi’

Television coverage of shark fishing for the harvest of fins was noted by one participant.

When asked to consider the sustainability of commercial fishing and aquaculture in more detail, many participants were horrified to learn (from others) that some types of fish may ‘become extinct’ if commercial fishing was not carefully regulated.

However, most admitted that they had never given these issues or fisheries resource management much thought prior to coming to the group discussion but commented that they implicitly support the management of fishing and aquaculture in a manner which does not endanger the fisheries resource or the environment.

It was evident that the term aquaculture, for fish farming, was not really understood by many participants even though most were familiar with farmed trout or salmon from Victorian or Tasmanian farms. The low level of understanding about aquaculture/fish farming, particularly its growing importance to fish supply, again became evident when the notion of organic fish was discussed (Section 4.4.14).

Discussion of fish farming and aquaculture centered around publicized controversial issues. These included:

- Use of ‘antibiotics’ in feed stuffs; and
- The effect of GMO fish escaping from farms and breeding with wild fish (Canada and Alaska).

Some comment was made about the importance of fish farming in removing pressure from natural fisheries through hand feeding (which was perceived to be ecofriendly). Some consumers also showed strong awareness of the Tasmanian fish farms and viewed their practices as generally more responsible compared to the controversial practices overseas .

Thus fish farming in Tasmania was generally seen in a positive light, partly because some participants had a positive holiday experiences and exposure to tourism promotional material highlighting the clean and green image.

The question about trust in industry credibility and assurances on sustainable practices arose in discussions about perceptions on aquaculture. It was suggested that assurances from government or international agencies were more credible than those from farmers themselves and that WWF (Worldwide Fund for Nature, now World Wildlife Fund) and the RSPCA (Royal Society For Prevention of Cruelty to Animals) were seen as trustworthy.

There was no comment on farmed fish taste *vis a vis* wild fish by participants, but one participant expressed an interest in promoting aquaculture instead of commercial fishing during discussion on the Marine Stewardship Council (below).

Overall, it was clear that the fishing and aquaculture industry had not engaged the active interest of consumers in any significant way, positive or negative, even though mention was made of shark finning operations and the wastage of fish due to the quota management scheme in some fisheries.

While participants had no strong ill feelings about commercial fishing or aquaculture some could easily be aroused and changed to active critics if they were exposed to further unfavourable media publicity. Hence, there is a need for the industry to engage with and communicate with consumers to explain the sustainable fishing practices of today and perhaps convert consumers to active supporters of the fishing and aquaculture industry.

4.4.13 Ecolabelling and Marine Stewardship Council

As indicated earlier there was only a very low level of concern about the sustainability of fisheries resources and protection of the marine environment amongst participants. There was no unprompted mention of the Marine Stewardship Council or other organizations devoted to the protection of marine resources.

When a reproduction of the Marine Stewardship Council logo was passed around amongst participants, it was not recognized by anyone present but first reactions were generally positive.

‘You’d think it was better quality, maybe’

‘You’d feel a bit safer’

‘is it an area or aquaculture’

‘does that mean that its farmed ?’

Most perceived the logo as some type of stamp of approval in relation to freshness/quality, food safety/hygiene, or a commitment to fishing regulations. All were unclear as to what exactly the logo was meant to represent and confused particularly about which of these three forementioned matters it related to.

Some respondents thought the logo symbolized an eye while others were reminded of the Heart Foundation’s tick of approval logo. There were even suggestions that it may indicate that the fish was Australian caught or perhaps passed by some quarantine agency.

There was no immediate association between the logo and responsible fishing practices.

Once explained, consumers expressed interest and a low-key approval of what was perceived as **‘a good idea’**. Generally there was a sentiment that sustainable and responsible fishing is important and must be encouraged, although one participant commented that the MSC objectives sounded like a motherhood statement.

The MSC labelling concept however requires a lot of trust by consumers of the practices of the organization and of fisherman and both sets of practices would need to be well communicated. If the consumers trust was gained it would appear that many would support the logo given the positive sentiment about the importance of sustainable fishing.

Consumers are prepared to support responsible fishing practices, and may even be willing to pay a little extra for fish that has the MSC endorsement logo. Approximately half of one group of females said they would pay 10% more for such certified fish but most were unwilling to pay 20% more for certified fish and only one said they would consider it. The survey data in Section 4.1.8 support the focus group findings.

Any prospective support of the MSC and its certification is dependent upon consumers being better informed on the issues associated with fishing sustainability, and the function and funding of the MSC itself. Without a consumer education campaign to promote the logo and its meaning, consumers are unlikely to have the trust to shift their preferences to fish bearing the MSC logo based on a desire to protect ocean ecology.

A connection of the logo to a well known organization such as World Wildlife Fund would perhaps benefit the MSC 'brand' because both the WWF and the RSPCA (Royal Society for Prevention of Cruelty to Animals) were cited as trustworthy organizations in relation to fish farming.

4.4.14 Organic Fish

The term organic fish was met with a mix of puzzlement, confusion and skepticism when participants were asked for their thoughts on the topic. Many asked 'what does it mean?': was it from farms, or from the sea, or from deep sea far from pollution?. Other suggestions were that it meant no preservatives, no GMO (genetically modified organisms) or no hormones.

Consumers were confused and/or skeptical about using the term organic to differentiate between fish, since they assumed most fish is a wild animal taken from the sea.

'Aren't they all ?'

Others questioned how the wild fish could be labeled organic, since the fishing industry has little control over the quality of ocean water.

'You can't control the sea. It doesn't make sense'

The term made more sense to most in connection with farmed fish, but as indicated earlier there was very little awareness of which species of fish were farmed, plus a low level of discomfort with the concept of fish farming by a few who considered fish farming as unnatural, and far from organic.

*'Organic means natural, to me, yet farming fish is not natural.
Fish from the sea, that's natural'*

It was evident however that although there was low awareness of what organic fish may be there was mild interest in the concept provided that it was not much more costly than conventionally produced fish. People familiar with organic agricultural produce and free range chicken and eggs were aware of the marginally higher prices of such produce and were more positively disposed to buying organic fish.

The issue of trust in labeling arose in regard to organic fish. It would appear that consumers would be interested in buying organic fish if they had confidence that the fish was in fact grown without preservatives, hormones, GMO and was not vastly more costly than fish from traditional production.

Thus, as with the MSC certification, there is a need to inform the public as to what constitutes organic fish and promote the benefits which this type of produce offers consumers if it is to make headway in an already competitive food marketplace.

4.4.15 What Would Encourage Consumers to Eat More Fish?

The key to increasing fish consumption in Australia appears to lie in increasing consumers' confidence in buying, handling and cooking fish. This can be achieved with the dissemination of more ideas for quicker easier meals with fish as one of the main ingredients.

Suggestions from the consumers themselves included:

- Educate consumers on how to cook fish, and provide quick and simple meal ideas, via cooking shows, recipe cards in supermarkets, cook books, magazine advertorials and supermarket demonstrations. Suggested uses could include stir-fries, barbeques, and curries – these dishes are considered quick, simple and modern, but few consumers had thought of using fish or seafood.

‘They need to teach us’

‘Nice simple recipes’

‘Not with 18 ingredients’

- Co-market with marinades, herb butters, gourmet sauces and mayonnaise, cooking equipment etc. Some consumers want these on display near the fish counter.
- Launching a consumer campaign to improve the image of fish and promote its benefits and versatility.

‘They advertise red meat. They advertise pork. They should advertise fish’

‘There’s very little advertising of fish. They need to do more promotion’

- Assist or encourage supermarkets to improve the variety and quality of fresh fish sold in store, improve the attractiveness of displays, and to better educate deli staff

‘Fish sections need to get their act together’

‘If the person behind the counter knew something about fish, it might help’

- Increase the range of fish cutlets and cuts in the fish shops. Perhaps undertake something similar to the initiatives undertaken in the lamb industry where consumers now have a wider lamb cuts product range and improved cooking information.
- Improve the display and smell in the less progressive fishmongers’ outlets.

Lower prices would of course help to sell more fish. A lower per kilogram price on fish may be difficult to achieve so the seafood industry should identify the species and cuts which offer greater value for consumers and promote meal ideas that are more affordable, eye appealing, convenient and quicker to prepare.

In depth discussion with participants at the end of several discussion groups clearly ascertained that the health benefits of eating fish were clearly understood and attractive but they had not led to any significant increase in per capita fish consumption for most households. In other words promoting the health benefits alone has not and is unlikely to be the most cost effective way of raising per capita fish consumption for the Australian seafood industry.

The challenge facing the fishing and aquaculture industry is to improve the performance of retail outlets and at the same time inform and educate the community on the efficient operation and government regulation of the Australian industry, and disseminate simple inexpensive meal ideas so that consumers have the confidence to buy and eat more seafood.

Industry reform and greater community communication are essential to overcome the general impediments to increased fish consumption that have been identified in these focus groups. More specific or targeted initiatives are needed to address particular issues such as promoting fresh vis a vis frozen or Australian vis a vis imported seafood. Recommendations on all these issues are contained in Volume One.

5. References

Bureau of Rural Sciences 2003. Community perceptions of fishing. Implications for industry image, marketing and sustainability. Bureau of Rural Sciences Canberra.

FRDC 1992. *National Seafood Consumption Study*, Fisheries Research & Development Corporation, Canberra.

FRDC 2002. Retail sale and consumption of seafood. Fisheries Research & Development Corporation, Canberra.

Ruello & Associates 1999, *A Study of the Retail Sale and Consumption of Seafood in Sydney*, FRDC project report 98/345 (Vol. I & II), Fisheries Research & Development Corporation, Canberra.

Ruello & Associates, 2000, *A Study of Seafood Consumption in Perth and the Development of a Guide to Targeted Promotion*, FRDC project report 99/342.

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- Melbourne City Council;
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- Seafood Australia Pty Ltd;
- Seafood Importers Association of Australia;
- Sealord Australia Pty Ltd;
- Simplot Australia Pty Ltd;
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- Victorian Fish & Food Marketers Association;
- Western Australian Fishing Industry Council; and
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Appendix 1 – In-Home Questionnaire

In Home Questionnaire

Out of Home Placements

Household member code

01	02	03	04	05	06	07	08	09
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Food Consumption Study

Today we are conducting a study on Food Consumption in Melbourne and would appreciate your help. The results of the study will be used in planning the supply and marketing of various food products in Victoria over the coming years.
PLEASE NOTE THAT THE RESPONDENT MUST BE THE MAIN PERSON RESPONSIBLE FOR THE HOUSEHOLD PURCHASE OF FOOD AND GROCERY ITEMS.

**We simply request your honest views.
Answer through your own eyes (what you think)
and disregard what others (or society) might think.**

Privacy

None of this information will be passed on to any third parties. Your information will be used for an overall analysis, with no reference at all to your individual responses. At the completion of the project, any data that might identify you will be destroyed.

Please circle the appropriate answer code(s)



- Q1. Which of the following statements best applies to you?**
 [IF THE RESPONDENT LIVES ALONE THIS SHOULD BE CODED AS BUY / PREPARE FOR HOUSEHOLD – CODE 4]

I buy and prepare food for self only	01	Continue
I Prepare food for household	02	Discontinue
I Buy food for household	03	Continue
I Prepare and buy food for household	04	Continue

- Q2a I now need to know about the composition of your household so I can ask you about what types of meals you would select for a specific meal occasion. Which description on the card best describes your household? [CIRCLE CODE IN LEFT HAND COLUMN]**

SHOW CARD A

		MEAL OCCASION FOR Q3 AND Q4 – TO CIRCLE					
	Q2a	Evening meal by self	Household evening meal	Weekend household meal – lunch	Entertaining entrée	Entertaining main	Children's evening meal
Single / living alone	01	✗			✗	✗	
Single / living with relative(s)	02	✗	✗	✗	✗	✗	
Single / living with non relative(s)	03	✗	✗	✗	✗	✗	
Single / living with parents	04	✗	✗	✗	✗	✗	
Married / de facto – no children	05	✗	✗	✗	✗	✗	
Married / de facto – dependent children	06	✗	✗	✗	✗	✗	✗
Married / de facto – adult family members	07	✗	✗	✗	✗	✗	
Single parent – dependent children	08	✗	✗	✗	✗	✗	✗
Single parent – adult family members	09	✗	✗	✗	✗	✗	
Refused	10	✗	✗	✗	✗	✗	✗

Q2b **How often would you prepare the following meals for your household?**
 READ OUT MEAL TYPES

SHOWCARD B

	Evening meal by self	Household evening meal	Weekend household meal – lunch	Entertaining – entrée	Entertaining – main	Children’s evening meal
More than once a week	01	01	01	01	01	01
Once a week	02	02	02	02	02	02
Once a fortnight	03	03	03	03	03	03
Once a month	04	04	04	04	04	04
Six times a year	05	05	05	05	05	05
Four times a year	06	06	06	06	06	06
Three times a year	07	07	07	07	07	07
Twice a year	08	08	08	08	08	08
Once a year	09	09	09	09	09	09
Less often than once a year	10	10	10	10	10	10
Never	11	11	11	11	11	11
Don’t Know	12	12	12	12	12	12

INTERVIEWER NOTE: ROTATE MEAL TYPE USED FOR HOUSEHOLD TYPE AS PER Q2a. MUST DO MEAL TYPE AT LEAST ONCE A YEAR TO QUALIFY FOR Q3. MOVE TO THE NEXT MEAL OCCASION IF NECESSARY.

- Q3. Which of the following meals would you be most likely to consider preparing for [READ OUT MEAL OCCASION AND CIRCLE]. You can select as many as six?**
 [RECORD UP TO SIX MEALS FOR THE ONE SELECTED OCCASION – Q2]

SHOWCARD B

Evening meal by self	Household evening meal	Weekend household meal – lunch	Entertaining – entrée	Entertaining – main	Children's evening meal
----------------------	------------------------	--------------------------------	-----------------------	---------------------	-------------------------

Meat

Sausages	01	01	01	01	01	01
Lamb chops	02	02	02	02	02	02
Steak	03	03	03	03	03	03
Mince / rissoles	04	04	04	04	04	04
Casserole or curry	05	05	05	05	05	05
Lamb for roast	06	06	06	06	06	06
Beef Stir fry	07	07	07	07	07	07
Veal	08	08	08	08	08	08

Pork

Pork chops	09	09	09	09	09	09
Pork for roast	10	10	10	10	10	10
Pork Fillet	29	29	29	29	29	29

Poultry

Whole chicken	11	11	11	11	11	11
Chicken fillet / piece	12	12	12	12	12	12
Chicken Schnitzel / parmigana	30	30	30	30	30	30

Fish / seafood

Canned fish	13	13	13	13	13	13
Whole fish	14	14	14	14	14	14
Fish fillet	15	15	15	15	15	15
Fish fingers	16	16	16	16	16	16
Salmon (not canned)	17	17	17	17	17	17
Prawns (not canned)	18	18	18	18	18	18
Scallops	19	19	19	19	19	19
Oysters						
Mussels	31	31	31	31	31	31

Other

Pasta dish	20	20	20	20	20	20
Vegetarian	21	21	21	21	21	21
Sandwich / bread	22	22	22	22	22	22
Pies / pasties	23	23	23	23	23	23
Canned vegetables / meat	24	24	24	24	24	24
Soup	25	25	25	25	25	25

SHOW CARD C FOR APPROPRIATE MEAL OCCASION AND TICK MEAL BOX

Q4. In other research people have made a number of statements about various foods for... [READ OUT MEAL OCCASION]. I'm going to read out some statements and would like you to tell me to which, if any, each statement applies. You may nominate none, one or as many as you like. There are no right or wrong answers, we are just interested in your opinion. [ROTATE TO ASTERISK]. The first statement is... [READ OUT FIRST STATEMENT]. From the card which foods does this statement apply to for [READ OUT MEAL OCCASION]?

INTERVIEWERS PLEASE MARK WHICH SHOWCARD HAS BEEN SHOWN

Evening meal by self Showcard C1	Household evening meal Showcard C2	Weekend Household meal - lunch Showcard C3	Entertaining – Entrée ShowCard C4	Entertaining - Main ShowCard C5	Children's Evening meal Showcard C6
1	2	3	4	5	6

Is too expensive for the meal	01	02	03	04	05	06	07	08	09	10
I need more information about its cooking	01	02	03	04	05	06	07	08	09	10
Is readily available to buy	01	02	03	04	05	06	07	08	09	10
I don't have the knowledge to buy it confidently	01	02	03	04	05	06	07	08	09	10
It isn't easy to prepare for cooking	01	02	03	04	05	06	07	08	09	10
Is not a filling meal	01	02	03	04	05	06	07	08	09	10
Has a taste that is disliked	01	02	03	04	05	06	07	08	09	10
There is wastage as a lot of what you buy can't be eaten	01	02	03	04	05	06	07	08	09	10
I can cook it in the microwave	01	02	03	04	05	06	07	08	09	10
Is a healthy meal	01	02	03	04	05	06	07	08	09	10
Is popular with the people who will be eating the meal	01	02	03	04	05	06	07	08	09	10

SHOW CARD D

Household member codet	1	2	3	4	5	6	7	8	9
Respondent	1	2	3	4	5	6	7	8	9

[illegible][illegible]

[FOR EACH HOUSEHOLD MEMBER, ASK Q6]

[illegible][illegible]

MEALS EATEN IN LAST 7 DAYS

From this point on, when we discuss seafood, we are referring to fish and other types of seafood. Now I would like you to think about all meals or snacks that you have had in the last seven days [STARTING FROM DINNER LAST NIGHT].

Q7. Did you eat [READ OUT MEAL OCCASION AND DAY OF WEEK] at home, out-of-home or did you miss this meal? [RECORD OPPOSITE] BY 'AT HOME' WE MEAN YOUR PERMANENT PLACE OF RESIDENCE, A HOLIDAY HOUSE OR CARAVAN WOULD BE REGARDED AS 'OUT OF HOME.'

IF ATE (Q7. CODE 1 OR 2) ASK Q8: OTHERWISE GO TO Q7 FOR NEXT MEAL

Q8. Was any type of seafood (fish or other seafood) consumed at this meal? It may have been the main part of the meal or an ingredient (for example, canned fish, marinara mix, prawns or anchovies on pizza, fish paste or fillings in sandwiches or a casserole). And it may have been prepared by you or someone else, or it may have been bought? [RECORD OPPOSITE]

IF SEAFOOD EATEN AT HOME (Q7 CODE 1 AND Q8 CODE 1) ASK Q9: OTHERWISE GO TO Q7 FOR NEXT MEAL OCCASION. IF UP TO 'OTHER' MEAL GO TO Q10 AND Q11]

Q9a. Which household members (including yourself), ate some of this fish or seafood meal? [RECORD HOUSEHOLD MEMBER CODE (FROM Q5)]

Q9b. Did you have any visitors (non-household members) to this meal? If so, how many? [RECORD OPPOSITE]

GO TO Q7

'OTHER FISH & SEAFOOD MEALS'

[OTHER SELF]

Q10. Did you eat any type of seafood (fish or other seafood) at any other time during [READ OUT DAY OF WEEK]? IF NO: RECORD Q7 CODE 3 FOR 'OTHER (SELF)' IF YES: Ask for time of day or meal occasion? [WRITE IN AND RECORD Q8 CODE 1 THEN ASK Q7, AND ASK Q9 IF ATE AT HOME]

[OTHER PERSON]

Q11. Did anyone else eat any type of seafood (fish or other seafood) at home during [READ OUT DAY OF WEEK]? An example of this maybe a meal prepared especially for a child. IF NO: RECORD Q7 CODE 3 FOR 'OTHER PERSON' IF YES: Ask for time of day or meal occasion? [WRITE IN AND RECORD Q7 AND Q8 CODE 1. THEN ASK Q9]

REPEAT Q7 TO Q11 FOR EACH MEAL OCCASION IN THE LAST SEVEN DAYS. ROTATE START POINT TO THE PREVIOUS DAY.

If seafood eaten at home in the last seven days [GO TO Q12A]	01
If seafood eaten outside home (by respondent) in the last seven days [GO TO Q19]	02
If seafood not eaten in the last seven days [GO TO Q23]	03

Questions on previous page

Meals Eaten in Last 7 Day

Monday

Meal Code Meals Eaten in Last 7 Day Monday			Interviewer Instruction: If ate (Q7 code 1 or 2) ask Q8:If Q8 code 1 go to Q9a & Q9b - otherwise go to Q7 for next meal																							
			Q7			Q8		Q9a											Q9b							
			At Hom e	Out-of-home	Not eat	Seafood Eaten		Household Member Code from Q5											Number of Visitors If none circle Code 00							
						Yes	No																			
						Q7, Q8	11	Dinner	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03
Q9a	21	Lunch	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06			
Q9b	31	Breakfast	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06			
Q10	41	Other (self) _____	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06			
Q11	51	Other Person _____	01	N/A	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06			

Tuesday

Q7, Q8	12	Dinner	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9a	22	Lunch	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9b	32	Breakfast	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q10	42	Other (self) _____	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q11	52	Other Person _____	01	N/A	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	

Wednesday

Q7, Q8	13	Dinner	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9a	23	Lunch	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9b	33	Breakfast	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q10	43	Other (self) _____	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q11	53	Other Person _____	01	N/A	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	

Thursday

Q7, Q8	14	Dinner	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9a	24	Lunch	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9b	34	Breakfast	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q10	44	Other (self) _____	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q11	54	Other Person _____	01	N/A	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	

Friday

Q7, Q8	15	Dinner	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9a	25	Lunch	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9b	35	Breakfast	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q10	45	Other (self) _____	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q11	55	Other Person _____	01	N/A	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	

Saturday

Q7, Q8	16	Dinner	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9a	26	Lunch	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9b	36	Breakfast	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q10	46	Other (self) _____	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q11	56	Other Person _____	01	N/A	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	

Sunday

Q7, Q8	17	Dinner	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9a	27	Lunch	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q9b	37	Breakfast	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q10	47	Other (self) _____	01	02	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	
Q11	57	Other Person _____	01	N/A	03	01	02	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	

IN HOME CONSUMPTION OF FISH AND SEAFOOD

WRITE IN DAY AND MEAL OCCASION THAT HAD FISH OR SEAFOOD IN HOME IN THE LAST SEVEN DAYS STARTING WITH THE MOST RECENT. ASK Q12A TO Q17. REPEAT FOR EACH FISH OR SEAFOOD MEAL IN HOME.

	1 st occasion	2 nd occasion	3 rd occasion	4 th occasion	5 th occasion	6 th occasion
RECORD MEAL CODE						
Q12a. Was the meal <u>cooked and served</u> by you (or someone else in your household), or did you (or someone else) <u>buy</u> cooked fish or seafood to eat in the home? [RECORD BELOW]						
Cooked and served	01	01	01	01	01	01
Bought to eat in-home	02	02	02	02	02	02
Q12b. Where did you (or someone else in your household) buy or obtain this fish / seafood? [RECORD BELOW] SHOWCARD E						
Commercial fisherman	01	01	01	01	01	01
Other fisherman (\$ paid)	02	02	02	02	02	02
Wholesaler / Co-op	03	03	03	03	03	03
Fish or general market	04	04	04	04	04	04
Fish shop (mostly uncooked)	05	05	05	05	05	05
Fish and chip shop (mostly cooked)	06	06	06	06	06	06
Supermarket / food store	07	07	07	07	07	07
Convenience store late trade	08	08	08	08	08	08
Delicatessen	09	09	09	09	09	09
Caught by household member	10	10	10	10	10	10
Gifts by non-household member	11	11	11	11	11	11
Other (specify)	12	12	12	12	12	12
Don't know / can't say	13	13	13	13	13	13
Q13. TYPE OF FISH / SEAFOOD What type (species) of fish / seafood was that? [WRITE IN AS MANY DETAILS AS POSSIBLE]						
Write in						
Don't know	01	01	01	01	01	01
Q14. FORM BOUGHT In what form was the fish / seafood bought? [RECORD BELOW] SHOWCARD F						
Fresh whole	01	01	01	01	01	01
Fresh fillet / cutlet	02	02	02	02	02	02
Fresh headed and gutted / peeled	03	03	03	03	03	03
Frozen whole	04	04	04	04	04	04
Frozen fillet / cutlet	05	05	05	05	05	05
Frozen headed and gutted / peeled	06	06	06	06	06	06
Fresh prepared ready to cook (eg. Shashliks)	07	07	07	07	07	07
Frozen packaged / ready cook (eg. Fish fingers, crumbed portions)	08	08	08	08	08	08
Smoked	09	09	09	09	09	09
Canned	10	10	10	10	10	10
Glass bottle	11	11	11	11	11	11
Cooked fillet	12	12	12	12	12	12
Other (specify)	13	13	13	13	13	13
Don't know	14	14	14	14	14	14
Q15a. WEIGHT OF SEAFOOD What was the total weight of... [READ OUT TYPE] served at this meal? [RECORD GRAMS. PROBE FOR WEIGHT USING INTERVIEW AIDS. IF UNCERTAIN PROBE FOR SIZE, NUMBER OF PIECES OR CAN(S)][RECORD BELOW]						
Weight	_____ Gms	_____ Gms	_____ Gms	_____ Gms	_____ Gms	_____ Gms
Pieces / size / cans	_____	_____	_____	_____	_____	_____
Q15b. And how much did you pay for that in total? [RECORD BELOW]						
PRICE	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Don't know	01	01	01	01	01	01

IN HOME CONSUMPTION OF FISH AND SEAFOOD

RECORD MEAL CODE FROM PREVIOUS PAGE	1 st occasion	2 nd occasion	3 rd occasion	4 th occasion	5 th occasion	6 th occasion

Q16. HOW FISH AND SEAFOOD IS COOKED / PREPARED / SERVED

How was this fish / seafood cooked or prepared? [RECORD BELOW]

SHOWCARD G

Boil / boiled in bag	01	01	01	01	01	01
Baked / oven	02	02	02	02	02	02
Grilled	03	03	03	03	03	03
Deep fried – at home	04	04	04	04	04	04
Deep fried – brought out-of-home	05	05	05	05	05	05
Steamed	06	06	06	06	06	06
Micro waved	07	07	07	07	07	07
Raw	08	08	08	08	08	08
Straight (as bought)	09	09	09	09	09	09
Barbequed	10	10	10	10	10	10
Pan fried	11	11	11	11	11	11
Poached (water in pan)	12	12	12	12	12	12
Pizza topping	13	13	13	13	13	13
Ingredient – mornay	14	14	14	14	14	14
Ingredient – stir fry	15	15	15	15	15	15
Ingredient – casserole	16	16	16	16	16	16
Ingredient – other	17	17	17	17	17	17
Other (specify)	18	18	18	18	18	18
Don't know / can't say	19	19	19	19	19	19

Q17. RECIPE

Was a recipe from a cookbook or leaflet used for this meal? [RECORD OPPOSITE]

Yes	01	01	01	01	01	01
No	02	02	02	02	02	02

CHECK Q7 AND Q8 THAT THE NUMBER OF OCCASIONS FOR WHICH SEAFOOD **EATEN IN-HOME** IN THE LAST SEVEN DAYS TALLIES.

IF Q14 CODES 1 TO 8 AND ON SAME OCCASION BOUGHT FROM Q12B CODES 4 TO 7 ASK Q18A. **OTHERWISE GO TO Q18D.**

SHOW CARD H

Not at all important							Very important
1	2	3	4	5	6	7	

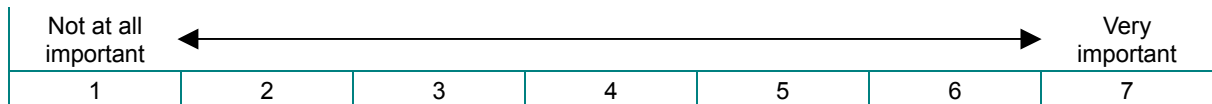
Q18a. You mentioned that you last bought fresh or frozen fish / seafood from a [READ OUT OUTLET Q12B CODES 4 TO 7 FOR LAST OCCASION]. On a scale of 1 to 7, how important is [READ OUT FIRST ROTATED STATEMENT], when you buy fresh or frozen fish or seafood from that type of outlet? [THEN ASK Q18B FOR THAT STATEMENT. REPEAT Q18A AND Q18B FOR EACH STATEMENT]. [RECORD RESPONSES BELOW]

SHOW CARD I

Q18b. And to which outlets from this card does this apply? You may nominate none, one or as many outlets as you like. There are no right or wrong answers – we are only interested in your opinion.

RECORD OUTLET FROM Q12b.	Q18a	Q18b					
	Import. Rating	Fish or gen. market	Retail fish shop	Fish and chip shop / take away	Super market / food store	None	Don't know
Clean outlet / store	_____	01	02	03	04	05	06
It sells fresh fish and seafood (ie not frozen)	_____	01	02	03	04	05	06
Has attractively displayed fish and seafood	_____	01	02	03	04	05	06
Has consistently low prices for fish and seafood	_____	01	02	03	04	05	06
I frequently shop there	_____	01	02	03	04	05	06
Offers fish and seafood specials	_____	01	02	03	04	05	06
Has staff informed about fish and seafood	_____	01	02	03	04	05	06
Is easily accessible to me	_____	01	02	03	04	05	06
Offers a wide variety of fish and seafood products	_____	01	02	03	04	05	06
Has friendly staff working there	_____	01	02	03	04	05	06
Has a good reputation for quality fish and seafood	_____	01	02	03	04	05	06
I can be confident that fresh fish or seafood has not been frozen	_____	01	02	03	04	05	06

SHOW CARD H



Q18c. Now I would like you to think about when you are actually selecting a specific type of fresh (or frozen) fish for a meal at home. Again on a scale of 1 to 7, how important are each of the following factors?
[READ OUT STARTING AT ROTATION MARK] [RECORD RESPONSES BELOW]

1.	The fish is the species I want	
2.	Has a white or light coloured flesh	
3.	I can be sure that it doesn't have bones	
4.	I can be sure that the fish is correctly labelled	
5.	Is a relatively low price	
6.	It is fresh rather than frozen	
7.	Has a light flavour	
8.	Recommended by the retailer	

ALL IN-HOME RESPONDENTS

Q18d. If the fish / seafood that you ate in-home on [READ AT LAST MEAL OCCASION WHEN ATE FISH] was not available, what would you have eaten instead? [READ OUT]

Another type of fish / seafood	01
Another type of food	02
[DO NOT READ] Don't know	03

WRITE IN DAY AND MEAL OCCASION (SEE Q7 CODE 2 AND Q8 CODE 1) THAT THE RESPONDENT HAD FISH OR SEAFOOD OUT OF HOME IN THE LAST SEVEN DAYS. STARTING WITH THE MOST RECENT ASK Q19A TO Q21. REPEAT FOR EACH FISH OR SEAFOOD MEAL OUT OF HOME.

Q21. What was the total weight of [READ OUT TYPE] eaten at this meal? [RECORD GRAMS. PROBE FOR WEIGHT USING INTERVIEWER AIDS. IF UNCERTAIN, PROBE FOR SIZE, NUMBER OF PIECES OR CAN(S)]

IF EATEN AT RESTAURANT, HOTEL OR FISH AND CHIP SHOP IN LAST WEEK (Q19A BOLD CODES) ASK Q22
OTHERWISE GO TO Q23

		1 st occasion	2 nd occasion	3 rd occasion	4 th occasion	5 th occasion	6 th occasion
WRITE IN DAY							
WRITE IN MEAL							
RECORD MEAL CODE							
Q19a.	PLACE WHERE BOUGHT / ATE SEAFOOD						
	Work / work cafeteria	01	01	01	01	01	01
	Restaurant	02	02	02	02	02	02
	Function centre	03	03	03	03	03	03
	Club	04	04	04	04	04	04
	Hotel	05	05	05	05	05	05
	Coffee lounge / café	06	06	06	06	06	06
	Fish and chip shop	07	07	07	07	07	07
	Fast food outlet / take away	08	08	08	08	08	08
	Sandwich / milk bar	09	09	09	09	09	09
	Friends / relatives house	10	10	10	10	10	10
	Other (specify)	11	11	11	11	11	11
Q19b.	Entree	01	01	01	01	01	01
	Main meal	02	02	02	02	02	02
Q19c.	NUMBER OF CHILDREN						
Q20.	TYPES OF FISH / SEAFOOD						
	Write in						
	Don't know	01	01	01	01	01	01
Q21.	WEIGHT	_____ Gms	_____ Gms	_____ Gms	_____ Gms	_____ Gms	_____ Gms
	Pieces/size/cans						

SHOW CARD H



Q22. On a scale of 1 to 7 how important are each of the following factors in deciding whether you select fish or seafood from the menu at a ... [READ OUT LAST OCCASION OUTLET FROM Q19A BOLD CODE ON PAGE 12] when eating out-of-home?
[READ OUT ROTATING TO ASTERISK]

RECORD ONLY FOR LAST OCCASION OUTLET – IE ONE OUTLET				Restaurant	Hotel	Fish and Chip Shop
1.	Fresh rather than frozen fish or seafood is used					
2.	Has a reputation for quality fish or seafood					
3.	Has consistently low prices for fish and seafood					
4.	Has staff knowledgeable about fish and seafood meals					
5.	Offers a wide variety of fish and seafood meals					
6.	Uses a method of preparation or cooking I could not use at home					
7.	Clean premises					

ALL FISH / SEAFOOD EATING HOUSEHOLDS

Q23. In general, how often would [READ OUT EACH TYPE OF SEAFOOD ONE AT A TIME] be served at home?
[SINGLE RESPONSE ONLY]

[illegible]

ALL RESPONDENTS

Q24a. Did you personally buy any type of fish / seafood, in the last week, which was eaten out-of-home only by children, under fifteen years, (that is not by yourself as well)? [FILL IN ALL DETAILS BELOW]

Yes	01
No [GO TO Q24B]	02

[illegible]

SHOW CARD K

Q24b. I am going to read out some statements that various people have made about seafood (fish or other seafood). As I read them out, I'd like you to tell me whether you agree, disagree or neither agree nor disagree with the statement. [READ OUT STATEMENTS][ROTATE TO ASTERISK]

	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Don't Know
1. I prefer Australian fish and seafood to imported products	01	02	03	04	05	06
2. The taste of frozen fish is as good as fresh fish	01	02	03	04	05	06
3. Fresh fish costs so much that I eat it rarely	01	02	03	04	05	06
5. I like preparing fish and seafood	01	02	03	04	05	06
6. If I knew more ways to cook fish / seafood I would eat more	01	02	03	04	05	06
7. Quality fish / seafood can be bought only from a specialised fish outlet	01	02	03	04	05	06
8. I like to buy familiar types of fish / seafood	01	02	03	04	05	06
9. I like to try different types of fish / seafood	01	02	03	04	05	06
10. I am concerned about the impact of pollution on fish / seafood safety	01	02	03	04	05	06
11. You can't be sure about the quality of frozen fish / seafood	01	02	03	04	05	06
12. I'm not always sure that fresh fish I buy hasn't been frozen	01	02	03	04	05	06
13. I don't buy packaged fish or seafood products	01	02	03	04	05	06
14. Seafood is for special occasions	01	02	03	04	05	06
15. I would be prepared to pay 10% more for my fish if I could be assured that it comes from a well managed ecologically sustainable fishery	01	02	03	04	05	06
16. There has been bad press in the media regarding fish / seafood contaminants that has lead to a reduction of my fish / seafood consumption	01	02	03	04	05	06
17. I eat fish / seafood because it is better for my health	01	02	03	04	05	06
18. I know of the recommended dietary intake of two servings of fish / seafood each week.	01	02	03	04	05	06
19. I am concerned about the mercury levels in fish / seafood	01	02	03	04	05	06

Q25. Some species of fish come from their natural habitat, others are farmed. Does this make any difference when you purchase fish or seafood?

Yes	01
No	02
Don't know / can't say	03

Now I would like to talk about specific types of seafood.

Q26a. Have you heard of the following types of fish or seafood? [READ OUT FULL DESCRIPTION AND RECORD BELOW]

Q26b. Have you ever tried...[READ OUT THOSE HEARD OF IN Q26A]

SHOW CARD L

Q27. Could you indicate at your own personal 'like' or 'dislike' of the fish or seafood you have tried? [READ OUT SEAFOOD TRIED IN Q26B]

	Q26a.	Q26b.			Q27.					
	Heard of	Tried	Not Tried	Don't know	Like very much	Slight like	Neither like nor dislike	Slight dislike	Dislike very much	Don't know
Pilchards or sardines (not canned)	01	01	02	03	01	02	03	04	05	06
Albacore tuna (not just tuna)	02	01	02	03	01	02	03	04	05	06
Farmed Barramundi	03	01	02	03	01	02	03	04	05	06
Farmed prawns (not just prawns)	04	01	02	03	01	02	03	04	05	06
Rainbow trout (freshwater)	05	01	02	03	01	02	03	04	05	06
Mussels	06	01	02	03	01	02	03	04	05	06
Oysters	07	01	02	03	01	02	03	04	05	06
None [GO TO Q29]	08	01	02	03	01	02	03	04	05	06

IF DISLIKED AT LEAST ONE TYPE (Q27 CODE 4 OR 5) ASK Q28; OTHERWISE GO TO Q29

Q28. What did you dislike about [READ OUT TYPE DISLIKED]?

Write in below each type disliked

REASON DISLIKED

Q29. What actions need to be taken by the fishing industry for more fish and seafood to be bought and eaten by your household?

	Office use

Q30a. Over the last three months how many members of your household have been fishing, on at least one trip, for recreation or leisure?

WRITE IN:

None	Go to Q31	01
------	-----------	----

Q30b. Over the last three months approximately what weight of fish was caught by all members of this household and brought home to eat? [RECORD IN GRAMS]

WRITE IN:

_____ GRAMS

Don't know	01
None	02

Q31. Would you like to see more fresh local seafood available to buy or would you prefer to see less local seafood available to allow for an increase in recreational fishing? So would you like... [READ OUT]

Far more local seafood available to buy	01
More available to buy	02
About right as it is now	03
Less local seafood available to buy	04
Far less available to buy	05
Don't know	06

Q32. Gender [INTERVIEWER TO RECORD]

Male	01
Female	02

Q33. Which age group do you fall in?

15 – 19	01
20 – 24	02
25 – 39	03
40 - 59	04
60 years or more	05

Q34. Would you mind telling me your marital status?

Single	01
Married / de facto	02
Divorced / separated / widowed	03
Refused	04

Q35a. Were you born in Australia or another country?

Australia [GO TO Q36a]	01
Another country	02

Q35b. Did you migrate to Australia before or after you were five years old?

Before five years old	01
After five years old	02

Q35c. In which country were you born?

United Kingdom / Ireland / Wales / Scotland	01
New Zealand	02
Italy	03
Greece	04
Yugoslavia	05
Vietnam	06
Netherlands	07
Malta	08
Other European	10
Middle Eastern	11
Other Asian	12
Other (specify) _____	09

Q36a. How many adult income (wage) earners in total are there in your household?

[THOSE ON ANY PENSION OR WHO ARE RETIRED DO NOT COUNT AS AN INCOME EARNER]

None	01
One	02
Two	03
Three or more (specify) _____	04
Refused / don't know	09

Q36b. Which of these statements best applies to you?

READ OUT

[SINGLE RESPONSE ONLY]

Full time work	01
Part time work	02
Full time student	03
Full time home duties / retired / looking for work	04

Q36c. What is the occupation of the main income earner in your household? [IF UNEMPLOYED OR RETIRED ASK USUAL OR MOST RECENT OCCUPATION]

Occupation _____

Industry _____

Q36d. Are you yourself the main income earner in your household or is someone else the main income earner?

Self	01
Someone else	02
Don't know / can't say	03

IF SOMEONE ELSE MAIN INCOME EARNER (Q36D CODE 2) AND RESPONDENT WORKS (Q36B CODE 1 OR 2) ASK Q36E

Q36e. What is your occupation?

Occupation

Industry

SHOW CARD N

Q36f. What is the total yearly gross (before tax) family income for all household members?

Less than \$15,000	01
\$15,000 – \$25,000	02
\$25,001 – \$40,000	03
\$40,001 – \$60,000	04
\$60,001 – \$80,000	05
Over \$80,000	06
Refused / don't know	07

THANK YOU VERY MUCH FOR YOUR HELP AS I SAID, I AM FROM IPSOS!

THE STUDY IS BEING CONDUCTED FOR THE FISHERIES RESEARCH AND
DEVELOPMENT CORPORATION TO HELP IN PLANNING THE SUPPLY AND MARKETING OF
FISH AND SEAFOOD IN AUSTRALIA IN THE FUTURE.

NAME

ADDRESS

SUBURB

POSTCODE

PHONE NUMBER ()

I hereby certify that this a true, accurate and complete interview.

SIGNED

(interviewer)

DATE

/ /



Appendix 2 – Out-of-Home Questionnaire

Out of Home Questionnaire

Complete and return your
survey to receive your
\$10.00 supermarket
voucher



Melbourne Seafood Consumption Study Out-of-Home Consumption

This is a study which is being conducted for the Fisheries Research and Development Corporation on Seafood Consumption in Melbourne. The results of the study will be used in planning the supply and marketing of fish and seafood in Melbourne. We would appreciate your help by completing this questionnaire on your eating habits out of the home. The person who is mainly responsible for food purchase and preparation has already been asked similar questions about in-home consumption.

In filling out this questionnaire, you will generally need to **record your answer by circling a number** (or code):

Eg. Are you?

Male	01
Female	02

Or by writing in the space provided

In some instances in this questionnaire, you **must** give only **one answer** [SINGLE RESPONSE ONLY]
and

In others you **may** give a **number of answers** [MULTIPLE RESPONSE ALLOWED].

When fish or seafood is mentioned it may have been the main part of the meal or an ingredient (like marinara mix, seafood cocktail, prawns or anchovies on pizza, fish paste or fillings in sandwiches or in a casserole or a fillet of fish at McDonalds). It may have been for nibbles, a snack, entrée or main meal.

THINK OF **ANY** TYPE OF FISH OR SEAFOOD.

Privacy

None of this information will be passed on to any third parties. Your information will be used for an overall analysis, with no reference at all to your individual response. At the completion of the project, any data that might identify you will be destroyed.

FISH OR SEAFOOD MEANS:

ANY fish or seafood that may have been the main part of a meal or an ingredient (like marinara mix, seafood cocktail, prawns or anchovies on pizza, fish paste or fillings in sandwiches or in a casserole) or even like a fillet of fish at McDonalds. It may have been for nibbles, a snack, entrée or main meal.

**PLEASE READ ALL INSTRUCTIONS CAREFULLY.
INSTRUCTIONS APPEAR IN CAPITAL LETTERS.**

Q1. Now think about all the meals or snacks that you have had in the last seven days. Starting from dinner yesterday, did you eat dinner at your home, out-of-home or didn't you eat this meal? [PLEASE EXCLUDE ANY MEALS THAT WERE BOUGHT OUT OF HOME AND THEN TAKEN HOME TO EAT, CIRCLE CODE THAT APPLIES FOR Q1 BELOW. ANSWER FOR ALL MEALS AND ALL DAYS]

Q2. [FOR ALL OUT OF HOME MEALS ONLY]

Was any type of fish or seafood eaten at this meal? CIRCLE CODE THAT APPLIES BELOW Q2

Q3. Did you eat any type of fish or seafood out-of-home at any other time during [THINK OF DAY]? CIRCLE CODE PROVIDED IF YES: WRITE IN TIME OF DAY (AM / PM) IN RIGHT HAND COLUMN

		Q1			Q2		Q3	
		At home	Out-of-home	Not Eat	Fish / seafood eaten	Fish / seafood not eaten	Other Fish/ Seafood Meal eaten out-of-home	
							Yes	No
Yesterday _____	Dinner	01	02	03	01	02		
	Lunch	01	02	03	01	02		
	Breakfast	01	02	03	01	02		
	Other (specify) _____	01	02	03	01	02		
Day _____	Dinner	01	02	03	01	02		
	Lunch	01	02	03	01	02		
	Breakfast	01	02	03	01	02		
	Other (specify) _____	01	02	03	01	02		
Day _____	Dinner	01	02	03	01	02		
	Lunch	01	02	03	01	02		
	Breakfast	01	02	03	01	02		
	Other (specify) _____	01	02	03	01	02		
Day _____	Dinner	01	02	03	01	02		
	Lunch	01	02	03	01	02		
	Breakfast	01	02	03	01	02		
	Other (specify) _____	01	02	03	01	02		
Day _____	Dinner	01	02	03	01	02		
	Lunch	01	02	03	01	02		
	Breakfast	01	02	03	01	02		
	Other (specify) _____	01	02	03	01	02		
Day _____	Dinner	01	02	03	01	02		
	Lunch	01	02	03	01	02		
	Breakfast	01	02	03	01	02		
	Other (specify) _____	01	02	03	01	02		
Day _____	Dinner	01	02	03	01	02		
	Lunch	01	02	03	01	02		
	Breakfast	01	02	03	01	02		
	Other (specify) _____	01	02	03	01	02		

NOW CHECK ON WHICH DAYS YOU HAD **FISH / SEAFOOD OUT OF HOME** AND WRITE IN DAY AND MEAL(S) BELOW

	1 st Occasion	2 nd Occasion	3 rd Occasion	4 th Occasion	5 th Occasion	6 th Occasion	7 th Occasion
Write in Day							
Mark type of meal for each day:							
• Breakfast	01	01	01	01	01	01	01
• Lunch	02	02	02	02	02	02	02
• Dinner	03	03	03	03	03	03	03
• Other	04	04	04	04	04	04	04

INSTRUCTION : IF NO SEAFOOD EATEN OUT OF HOME IN LAST WEEK - GO TO Q11

Q4. For each of the above occasions where did you eat or purchase seafood for...? [THINK OF DAY AND MEAL OCCASION]. CIRCLE CODE – SINGLE RESPONSE ONLY.

Work cafeteria	01	01	01	01	01	01	01
Restaurant	02	02	02	02	02	02	02
Function centre	03	03	03	03	03	03	03
Club	04	04	04	04	04	04	04
Hotel	05	05	05	05	05	05	05
Coffee lounge / café	06	06	06	06	06	06	06
Fish and chip shop	07	07	07	07	07	07	07
Fast food outlet / take away	08	08	08	08	08	08	08
Sandwich / milk bar	09	09	09	09	09	09	09
Friends / relatives house	10	10	10	10	10	10	10
Other specify:	11	11	11	11	11	11	11

Q5. Was this for an entrée / snack or main meal? [RECORD BELOW]

Entree / snack	01	01	01	01	01	01	01
Main meal	02	02	02	02	02	02	02

Q6. For how many children under fifteen years of age, did you personally buy (pay for) fish or seafood at this meal? [WRITE IN NUMBER BELOW. IF NONE, WRITE 0 – IF SOMEONE ELSE PAID FOR THIS SEAFOOD ALSO WRITE IN 0]

Number of children							
--------------------	--	--	--	--	--	--	--

Q7. What type (species) of fish or seafood was that? IF DON'T KNOW RECORD AS MUCH DETAIL AS YOU CAN

Write in Species below for each occasion	1 st Occasion	2 nd Occasion	3 rd Occasion	4 th Occasion	5 th Occasion	6 th Occasion	7 th Occasion

Q8. In what form was this [THINK OF TYPE OF FISH OR SEAFOOD] prepared? CIRCLE CODE BELOW

	1 st Occasion	2 nd Occasion	3 rd Occasion	4 th Occasion	5 th Occasion	6 th Occasion	7 th Occasion
Whole	01	01	01	01	01	01	01
Fillet	02	02	02	02	02	02	02
Cutlet (sliced with backbone)	03	03	03	03	03	03	03
Headed / peeled	04	04	04	04	04	04	04
Smoked	05	05	05	05	05	05	05
Canned	06	06	06	06	06	06	06
Pre-prepared (eg fish fingers / cakes)	07	07	07	07	07	07	07
Other specify:	08	08	08	08	08	08	08
Don't know / can't say	98	98	98	98	98	98	98

Q9. What was the total weight of [THINK OF TYPE OF FISH OR SEAFOOD] eaten at this meal? WRITE IN GRAMS AND OTHER DETAILS LIKE THE NUMBER OF PIECES AND SIZES

	1 st Occasion	2 nd Occasion	3 rd Occasion	4 th Occasion	5 th Occasion	6 th Occasion	7 th Occasion
Weight in Grams							
Size of pieces (eg. large, medium, small if fish)							
Number of pieces							
Don't Know	98	98	98	98	98	98	98

Q10. How was this [THINK OF TYPE OF FISH OR SEAFOOD] cooked? CIRCLE CODE BELOW

	1 st Occasion	2 nd Occasion	3 rd Occasion	4 th Occasion	5 th Occasion	6 th Occasion	7 th Occasion
Boil / boiled in bag	01	01	01	01	01	01	01
Baked / oven	02	02	02	02	02	02	02
Grilled	03	03	03	03	03	03	03
Deep fried	04	04	04	04	04	04	04
Steamed	05	05	05	05	05	05	05
Microwaved	06	06	06	06	06	06	06
Raw	07	07	07	07	07	07	07
Straight	08	08	08	08	08	08	08
Barbequed	09	09	09	09	09	09	09
Pan fried	10	10	10	10	10	10	10
Poached (water in pan)	11	11	11	11	11	11	11
Pizza topping	12	12	12	12	12	12	12
Ingredient – mornay	13	13	13	13	13	13	13
Ingredient – stir fry	14	14	14	14	14	14	14
Ingredient – casserole	15	15	15	15	15	15	15
Ingredient – other	16	16	16	16	16	16	16
Other specify:	17	17	17	17	17	17	17
Don't know	98	98	98	98	98	98	98

INSTRUCTION : REPEAT FOR ALL FISH / SEAFOOD MEALS EATEN OUT OF HOME IN THE LAST WEEK – REFER TO Q1-3 ABOVE.

Q11. Did you personally buy any type of fish / seafood, in the last week, which was eaten out-of-home only by children, under fifteen years, (that is not by yourself as well)?

IF YES: PLEASE FILL IN DETAILS BELOW –
ONLY FOR FISH / SEAFOOD YOU PAID FOR
YOURSELF

Yes	01
No [GO TO Q12]	02

[illegible]

Q12. How important are each of the following statements (listed below) in deciding whether you select fish or seafood from the menu at a [THINK OF EACH OUTLET BELOW] when eating out-of-home? WRITE IN NUMBER (IE. 1,2,3,4,5,6 OR 7 FROM THE SCALE BELOW). RECORD A NUMBER FOR **EVERY** STATEMENT **AND** OUTLET.

	Restaurant	Hotel	Fish and Chip Shop
Fresh rather than frozen fish or seafood is used			
Has a reputation for quality fish or seafood			
Has consistently low prices for fish and seafood			
Has informed staff about fish and seafood meals			
Offers a wide variety of fish and seafood meals			
I can be sure that fresh fish or seafood has not been frozen			
Clean Premises			

[illegible]

- Q14. Listed below are some statements that various people have made about fish and seafood **eaten outside the home**. Circle if you agree, disagree or neither agree nor disagree with the statement.

SINGLE RESPONSE FOR EACH STATEMENT

		Strongly disagree	Somewhat disagree	Neither Agree Nor Disagree	Somewhat agree	Strongly Agree	Don't Know
1.	I prefer Australian fish and seafood to imported products	01	02	03	04	05	06
2.	The taste of frozen fish is as good as fresh fish	01	02	03	04	05	06
3.	Fresh fish costs so much that I eat it rarely	01	02	03	04	05	06
4.	I eat fish / seafood because it is better for my health	01	02	03	04	05	06
5.	I would eat the same amount of fish / seafood no matter what the price was	01	02	03	04	05	06
6.	Quality fish / seafood can be bought only from a specialised fish outlet	01	02	03	04	05	06
7.	I like to buy familiar types of fish / seafood	01	02	03	04	05	06
8.	I like to try different types of fish / seafood	01	02	03	04	05	06
9.	I am concerned about the impact of pollution on fish / seafood safety	01	02	03	04	05	06
10.	Seafood is for special occasions	01	02	03	04	05	06
11.	Fish / seafood is good for a light meal	01	02	03	04	05	06
12.	There has been bad press in the media regarding fish / seafood contaminants that has lead to a reduction of my fish / seafood consumption	01	02	03	04	05	06
13.	Seafood is for special occasions	01	02	03	04	05	06
14.	I would be prepared to pay 10% more for my fish if I could be assured that it comes from a well managed ecologically sustainable fishery	01	02	03	04	05	06
15.	I am concerned about the mercury levels in fish / seafood	01	02	03	04	05	06
16.	Fish is less likely to be contaminated than meat and chicken	01	02	03	04	05	06
17.	I know of the recommended dietary intake of two servings of fish / seafood each week?	01	02	03	04	05	06

Now I would like you to think about specific types of seafood.

Q15a. Have you heard of the following types of fish or seafood? [READ DESCRIPTION BELOW AND CIRCLE IN FIRST COLUMN IF HEARD OF]

Q15b. Have you ever tried...[ALL THOSE HEARD OF IN Q15a – CIRCLE ONE NUMBER IN SECOND, THIRD OR FOURTH COLUMNS BELOW]

Q16. Could you indicate your own personal ‘like’ or ‘dislike’ of the fish or seafood you have tried? [ALL THOSE TRIED IN Q15b – CIRCLE ONE CODE NUMBER FOR Q16]

	Q15a.	Q15b.			Q16.					
	Heard of	Tried	Not Tried	Don't know	Like very much	Slight like	Neither like nor dislike	Slight dislike	Dislike very much	Don't know
Pilchards or sardines (not canned)	01	01	02	03	01	02	03	04	05	06
Albacore tuna (not just tuna)	02	01	02	03	01	02	03	04	05	06
Farmed Barramundi	03	01	02	03	01	02	03	04	05	06
Farmed prawns (not just prawns)	04	01	02	03	01	02	03	04	05	06
Rainbow trout (freshwater)	05	01	02	03	01	02	03	04	05	06
Mussels	06	01	02	03	01	02	03	04	05	06
Oysters	07	01	02	03	01	02	03	04	05	06
None [GO TO Q29]	08	01	02	03	01	02	03	04	05	06

IF DISLIKED AT LEAST ONE TYPE (Q16 NUMBER 4 OR 5) ANSWER Q17; OTHERWISE GO TO Q18

Q17. What did you dislike about [FOR EACH TYPE DISLIKED]?

Write in below each type disliked

Write below reason disliked

Q18. And can you suggest any actions that could be taken by the fishing industry to increase the likelihood of people ordering seafood meals when eating out?

	Office only

PLEASE ANSWER Q19 TO Q25 [CIRCLE THE CODE WHICH APPLIES TO YOU]

Q19.	Are you...?	Male	01
		Female	02

Q20.	Which age group do you fall in?	15 – 19	01
		20 – 24	02
		25 – 39	03
		40 - 59	04
		60 years or more	05

Q21.	Would you mind recording your marital status?	Single	01
		Married / de facto	02
		Divorced / separated / widowed	03
		Refused	04

Q22a.	Were you born in Australia or another country?	Australia	01
		Another country [GO TO Q22B]	02

Q22b.	Did you migrate to Australia before or after you were five years old?	Before five years old	01
		After five years old [GO TO Q22C]	02

Q22c.	In which country were you born?	United Kingdom / Ireland / Wales / Scotland	01
		New Zealand	02
		Italy	03
		Greece	04
		Yugoslavia	05
		Vietnam	06
		Netherlands	07
		Malta	08
		Other European	10
		Middle Eastern	11
		Other Asian	12
		Other (specify) _____	09

Q23.	Which of these statements best applies to you?	Full time work	01
		Part time work	02
		Full time student	03
		Home duties / retired / looking for work	04

Q24	Are you yourself the main income earner in your household?	Yes	01
		No	02

IF NOT THE MAIN INCOME EARNER ASK Q24B

Q24b What is your occupation and in which industry do you work? [IF UNEMPLOYED OR RETIRED THEN ASK USUAL OR MOST RECENT OCCUPATION]

Occupation _____

Industry _____

Q25. What is your total yearly gross (before tax) income?

Less than \$15,000	01
\$15,000 - \$25,000	02
\$25,001 - \$40,000	03
\$40,001 - \$60,000	04
\$60,001 - \$80,000	05
Over \$80,000	06
Don't know	07

THANK YOU VERY MUCH FOR YOUR HELP!

**THE STUDY IS BEING CONDUCTED FOR THE FISHERIES RESEARCH AND
DEVELOPMENT CORPORATION TO HELP IN PLANNING THE SUPPLY AND MARKETING OF
FISH AND SEAFOOD IN AUSTRALIA IN THE FUTURE.**

THANK YOU FOR YOUR VALUABLE PARTICIPATION

OPTIONAL: - If you wish to receive your Supermarket voucher please mail your completed questionnaire back to us in the envelope provided.

NAME _____

ADDRESS _____

SUBURB _____ POSTCODE _____

PHONE NUMBER () _____

PLEASE PLACE THIS COMPLETED QUESTIONNAIRE IN THE REPLY-PAID ENVELOPE PROVIDED AND PUT IT IN THE MAIL. IF THE ENVELOPE HAS BEEN MISPLACED, JUST PUT IT IN A PLAIN ENVELOPE (STAMP NOT NECESSARY) AND MAIL IT TO:

Ipsos Australia Pty Ltd
Level 4, 493 St Kilda Road
Melbourne, Victoria, 3004



Appendix 3 – Project Team

The project team for the consumer studies reported in this volume consisted of:

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