A Study Of The Composition, Value And Utilisation Of Imported Seafood In Australia

PROJECT FINAL REPORT

For The

Australian Government

Fisheries Research and Development Corporation

Project Number 2010/222

ISBN 0 9577695 3 9

Prepared by

RUELLO & ASSOCIATES PTY LTD ABN 69 080 268 640

Consulting, Training and Advisory Services

August 2011

A Study Of The Composition, Value And Utilisation Of Imported Seafood In Australia

Nick V. Ruello. Ruello & Associates Pty Ltd
PO Box 333 Clifton Beach Qld. 4879

Copyright

Disclaimer

The Fisheries Research and Development Corporation plans, invests in and manages fisheries research and development throughout Australia. It is a statutory authority within the portfolio of the federal Minister for Agriculture, Fisheries and Forestry, jointly funded by the Australian Government and the fishing industry.

CONTENTS

Contents (continued)

Acronyms And Terminology

ABS	Australian Bureau of Statistics
ABARES	Australian Bureau of Agricultural and Resources Economics and Sciences
AQIS	Australian Quarantine and Inspection Service
COOL	Country Of Origin Labelling
FRDC	Fisheries Research and Development Corporation
HTISC	Harmonised Tariff Item Statistical Code
SIAA	Seafood Importers Association of Australasia
TFFA	Thai Frozen Foods Association
VASEP	Vietnamese Association of Seafood Processors And Producers

Terminology

Fishmongers Refers to retail fish shops and market outlets which derive most of their income from the sale of fresh and frozen seafood (as distinct from the supermarket stores).

Food service This includes fast food outlets, fish and chips stores, cafes, restaurants and other dining venues (stand alone or within hotels) as well as other businesses providing meals such as catering for mining camps, special functions, hospitals, jails and other institutions.

Fresh, chilled or frozen This is a category classification used in the ABARES Fisheries Statistics yearbooks, without any definition of the words ***fresh*** or ***chilled***; in this report the words ***fresh*** and ***chilled*** are used synonymously and refer to goods maintained under some type of temperature control (usually chiller packs in international transit) but not frozen.

NON TECHNICAL SUMMARY

2010/222 A study of the composition, value and utilisation of imported seafood in Australia

PRINCIPAL INVESTIGATOR: Nick V. Ruello
ADDRESS: Ruello & Associates Pty Ltd
PO Box 333 Clifton Beach
Qld. 4879
Telephone 07 40590836
e-mail: nick@ruello.com

OBJECTIVES

1. To identify and evaluate the type and quality of data on Australian imports available in Australia or from overseas sources; examine options for improving the collection and collation of meaningful import data.

2. To examine and document the composition of the seafood import sector: business types (manufacturing, importing, general seafood sales etc) and sizes and approximate numbers in each state.

3. Examine and document the types, volumes and landed price of the major and selected imports, such as squid, to Australia, using the latest ABARES Fisheries Statistics and data gathered from detailed interviews with importers (with particular reference to fresh and frozen seafood, and ignoring dried seafood).

4. Estimate the flow of selected (edible) products into bait, manufacturing, food service and the retail supply chain, and the relative contribution or importance to such trade and to final consumption. Document landed prices, and where possible, estimate the final value of the seafood at last sale.

5. Undertake a case study on barramundi, basa and prawns with an in-depth examination of the price competition and other interaction of the imports with domestic equivalents.

6. Review the imported seafood trade patterns and flows within Australia and document likely changes in trading patterns with various goods.

7. Review and document current food safety, sustainability and biosecurity activities in the key exporting countries.

OUTCOMES ACHIEVED TO DATE:

The Australian Bureau of Agricultural and Resources Economics and Sciences (ABARES) has already acted upon early advice about inconsistencies in the use of the category label ***canned*** and ***canned prawns*** and a couple of other weaknesses in the Australian Fisheries Statistics yearbooks to improve its reporting in the yearbook for financial year 2009/10.

ABARES has also started assessing how the collection and reporting of fisheries import data can be improved overall. This improved reporting at ABARES will allow better analyses of prawn trade statistics for the many government and industry users of these yearbook statistics.

A draft report and a presentation by the Principal Investigator at a joint prawn and barramundi farmers annual conference in early August have provided industry and government agencies with:
1. An account of the composition of the import sector and how imports interact with domestic production.
2. Factual information to rebut negative media about imported seafood that damages the image of importers, the seafood distribution chain generally and government agencies (farmers were surprised to learn that a CSIRO review of imported seafood inspection protocols indicates that imports present no more food safety risk than Australian seafood).

Importers, fish farmers and researchers were pleased to learn that reliable statistics on fish exports to Australia are available from the New Zealand Seafood Industry Council at a modest cost, and free from the Thai Frozen Foods Association's website and the Vietnamese Association of Seafood Exporters and Producers' website.

The detailed information gained from this study has quickly been used to strengthen business planning and decision making in aquaculture, seafood processing and marketing businesses and in policy development by government personnel and will increasingly do so as it becomes more widely available from the full final report and a forthcoming summary brochure.

KEY WORDS: Imported seafood, prawns, barramundi, basa, import competition, supermarket seafood sales, Country of origin labelling.

This study was undertaken to provide much needed information on the composition, value and utilisation of imported seafood in Australian trade to enable informed discussion about specific volumes, values and the interaction between overseas and domestic produce.

Detailed analysis of official statistics, various reports, trade information gathered from industry and from personal observations indicates that:

- The 193,000 tonnes of seafood imported in 2008/9 had an estimated final sales value of $4.5 billion, 3.5 times the import cost of $1.3 billion.
- Almost all is used by the retail and the food service sector with little volume utilised for food manufacturing; utilisation as bait is negligible.
- These imported goods provided 72% of the seafood flesh consumed in Australia and more than two thirds of the seafood industry's post-harvest sector employment.
- Imported seafood mostly generates a higher multiplier from the import cost to the final sale value than Australian produce because the sellers typically constrain selling prices and profit margins on the (costlier) domestic goods to make them more affordable for consumers.
- The overall quality, packing, size grading and branding of imports is good, so much so that the prices of imports are increasingly as high as or surpassing those of the equivalent Australian product.
- CSIRO and other authoritative reviews indicate that imported seafood does not pose any greater food safety risk than locally produced food. The days of "cheap inferior Asian imports" are gone.

Canned fish, frozen fillets, frozen whole and processed prawns and various frozen squid products are the major imported items, in that order. The four most important sources are Thailand, New Zealand, Vietnam and China.

Thailand is a major source of canned tuna, frozen prawns and various highly transformed prawn products. New Zealand is the predominant source of fresh and frozen fish and fillets, and green mussel products. Vietnam is ***the*** supplier of basa fillet and a large volume of highly processed prawns. China is also a major prawn supplier and the largest overseas source of squid.

Basa fillet is the most commonly and widely eaten import and its low cost underpins the viability of many fish and chips outlets and the seafood related profitability in low price eateries and catering operations.

Vannamei prawns and basa have gained remarkable acceptance globally because they provide enjoyable nutritious seafood, particularly for low budget shoppers; they form the cornerstones of Australian supermarket "Deli" seafood sections today.

The market interaction between imports and domestic seafood is typically complex and changing, often because of changes in the value of the A$. The strongest ***direct price competition*** between imports and the equivalent domestic produce noted was that for frozen cooked farmed black tiger prawns, New Zealand fresh fish generally and Asian fresh barramundi fillets.

The very large fillet size and the heavy unbranded packs of wild Australian barramundi fillets are market impediments that coupled with a higher price make them totally different to the branded multi size-grade imports with various packaging options. This ***indirect competition*** between domestic and imported barramundi is less than the competition from farmed salmon.

Basa fillet is operating in a low price market segment on its own with no white skinless boneless fillet near its price and so it is providing ***indirect competition*** to Australian and to other imported fish.

Some imports such as scallops and squid are complementary to equivalent Australian goods because they fill supply gaps in the off season and particularly in "bad years"; overseas scallops help scallops "stay on the menu" and imports provide raw material for squid processors in Australia.

Many exotic species such as Asian whitefish and Chilean king crab (legs) add diversity to the seafood menu and increase sales revenue for businesses without any noticeable impact on Australian producers.

Seafood retailers compete for a share of the public's discretionary spending dollar against other goods and services. But much of the Australian seafood industry has invested little in making seafood more enjoyable and "top of mind" and in strengthening demand.

Country of origin labelling differentiates imports from local produce but it is not a panacea for the producers' costs-price squeeze – it has not generated lasting price rises — action plans addressing specific problems are needed. For the prawn sector, the fundamental problem has been a paucity of innovation and concerted action to increase demand while aggregate supply kept growing.

Australian seafood producers have more to gain by looking on importers as allies rather than adversaries and collaborating in a mutually beneficial quest to raise demand for the seafood category overall and gain a greater share of the consumer dollar regardless of the foods' origin.

The type and quality of statistics available gratis from the Australian Bureau of Statistics or the Australian Bureau of Agricultural and Resources Economics and Sciences were largely found to be reliable but the product categories are typically too broad for specific product analysis. More detailed or disaggregated data can be ordered from the ABS but few businesses make use of this consulting service because it is considered costly.

Several recommendations are made for removing anomalies and improving the collation and usefulness of official Australian import statistics.

The NZ Seafood Industry Council, the Thai Frozen Food Association and the Vietnamese Association Of Seafood Exporters And Producers' websites have all been identified as sources of good quality seafood trade data.

1. INTRODUCTION

This is believed to be the first comprehensive study of the composition of the import sector of the Australian seafood industry, the utilisation of imported seafood or the contribution of imported seafood to the Australia seafood trade and consumption.

The study focuses on the fresh, chilled and frozen category of seafood. Canned seafood is reviewed only briefly, in relation to its continued popularity and voluminous sales, and the dried seafood category is listed in import volumes and values, but not discussed because they are handled by grocery or general food distributors rather than the seafood industry.

1.1 Background To The Study

The impact of imports on Australian seafood trade and consumption has been the subject of strong discussion for decades and at the Australasia Aquaculture Conference, in July 2010 there was ample speculation but few facts available about the volume of imports and how they may compete with Australian produce.

This led the writer to discuss this situation of facts versus speculation with farmers, importers and later the Seafood Importers Association of Australasia who all agreed that a better understanding of the utilisation of imports in Australia was necessary for informed discussion and better business planning and for policy development by government agencies.

Moreover they also agreed to support an application for funding for an R & D application under the Tactical Research Fund for an in-depth study of seafood imports.

The Principal Investigator subsequently discussed this proposed application with fishers, farmers, processors, marketers, government agencies, FRAB representatives and personnel in various industry organisations and invariably received strong encouragement.

In short, there was a strong belief among government and industry persons consulted that a detailed study of imports was much needed and long overdue.

1.2 Need For The Study

Imports have been reported as providing about 60 to 75% of current seafood supply in Australia, the importance varying according to the source. But reliable information on the make up of much of this seafood has not been available, because of, *inter alia*, the limited detail and quantity of data published by the Australian Bureau of Statistics or the Australian Fisheries Statistics annual report prepared the Australian Bureau of Agricultural and Resources Economics and Sciences (ABARES).

Moreover some statistics on very important species/products such as basa are not collated by Australian Customs because the species do not have an international tariff classification code number. This lack of national statistical data has been responsible for much of the confusion and uncertainty about the role basa and barramundi imports play in Australia.

There is no reliable detailed picture of the types of edible imports, the nature of their distribution chain in Australia, nor their contribution to trade and consumption. The seafood industry has hardly noticed the strong growth of the canned seafood category and how it matches the total volume of fresh and frozen fish imports.

Consequently industry, government agencies and researchers in the fisheries, food, public health and quarantine field have had to rely on incomplete and often unreliable information; this means their decision making and priority setting has been sub optimal.

This study was initiated to overcome the absence of a detailed reliable picture of what happens to imported seafood in this country and to identify what accurate data on Australia's imports are available here or obtainable from overseas sources.

2 OBJECTIVES

1. To identify and evaluate the type and quality of data on Australian imports available in Australia or from overseas sources; examine options for improving the collection and collation of meaningful import data.

2. To examine and document the composition of the seafood import sector: business types (manufacturing, importing, general seafood sales etc) and sizes and approximate numbers in each state.

3. Examine and document the types, volumes and landed price of the major and selected imports, such as squid, to Australia, using the latest ABARES Fisheries Statistics and data gathered from detailed interviews with importers (with particular reference to fresh and frozen seafood, and ignoring dried seafood).

4. Estimate the flow of selected (edible) products into bait, manufacturing, food service and the retail supply chain, and the relative contribution or importance to such trade and to final consumption. Document landed prices, and where possible, estimate the final value of the seafood at last sale.

5. Undertake a case study on barramundi, basa and prawns with an in-depth examination of the price competition and other interaction of the imports with domestic equivalents.

6. Review the imported seafood trade patterns and flows within Australia and document likely changes in trading patterns with various goods.

7. Review and document current food safety, sustainability and biosecurity activities in the key exporting countries.

Figure 1a. Imported barramundi fillets.

Figure 1b. Vietnamese basa fillets

3 METHODOLOGY

Potential seafood importers were located via referrals, electronic and literature searches and contacted by phone, and where identified as active importers, asked to participate in this study.

More than a hundred persons were contacted and 81 agreed to participate in a personal or telephone consultation. Most participants willingly gave some account of their business history and current activities, their product range and main products imported and offered comment on imports outlook for the future and other matters of interest to them.

Seafood wholesalers, retailers (fishmongers and supermarket) processors, restaurateurs and other food service business operators were also visited or consulted by phone to gain an understanding of the trade flow from importer to consumer. Field work in Cairns, Brisbane, Sydney, Melbourne, Adelaide and Perth was undertaken from late January through to the end of June.

Qualitative and quantitative information gathered in interviews and from personal observations in wholesale, retail or foods service establishments was used in conjunction with analysis of the available Australian Bureau of Statistics, ABARES and overseas data. This body of information was evaluated together with that from previous studies in Cairns and Sydney (FRDC 2010a), Queensland (Ruello & Associates 2008) and Melbourne (Ruello & Associates 2005) to develop the general picture and quantitative assessments in this report.

The estimates of price mark-up in the retail and food service sector, and the assessment of the multiplier from landed cost to final sales value, were thus based on personal observations and information from industry sources. These assessments were based on limited data and are somewhat imprecise and should be treated accordingly; estimates on “other fish preparations”, for example, were acknowledged as based on conjectural information.

The ABARES Fisheries Statistics yearbook for 2008/9 (ABARES 2010) was the latest source of detailed national statistics on production, imports and exports at the time of writing. These statistics were supplemented with some ABS preliminary statistics for 2009/10 obtained from the Australian Commodities Statistics yearbook and via paid ABS subscription.

Every attempt has been made to provide the most precise information available however because of the small number of participants dealing with some species/products or the tiny number of companies involved in a particular activity some data has of necessity been masked or grouped to protect commercially sensitive information or business relationships.

4. IMPORT DATA AVAILABILITY AND QUALITY

Reliable international trade data are freely available from a number of national government or government aligned sources (such as Statistical Bureau or Customs) in Australia and overseas but the data available gratis tends to be for highly aggregated commodity groups and commonly at least several months in arrears.

The Food and Agriculture Organisation (FAO) of the United Nations publishes annual fisheries production and trade data for more than a hundred nations on its website but the FAO statistics are typically about two years behind when posted on this website.

The New Zealand Seafood Industry Council (SIC) has a moderate amount of production and export information on line free and also offers detailed customised reports at a modest price. **The Thailand Frozen Food Association** (TFFA) offers a considerable amount of import and export data on its website with free access. The **Vietnamese Association of Seafood Exporters and Processors** (VASEP) also has a web site with free access to aggregated export data. These sites are discussed further, in a following section of this chapter.

More detailed or more timely data can be obtained from most of these sources, but at a price, as discussed below. Nonetheless these data can best be described as customs commodity data on imports (and exports), eg Prawns (all species combined), rather than trade data on a particular prawn product eg black tiger prawn head off, peeled, tail on.

Detailed and timely statistical information and trade news especially on major commodity groups such as prawn/shrimp, salmon, squid etc can be accessed electronically 24/7 by paid subscription to a variety of web sites/electronic newsletters such as those offered by the INFOFISH organisation (www.infofish.org) and Russian Insider Reports (www.megafishnet.com).

Moreover these subscription web sites typically offer timely trade information or sales data on a particular product in a nominated market eg black tiger tails 20/30 count sold in Tokyo; because they focus on trade in major markets — overseas — they are probably of more value to exporters than those interested in imports to Australia.

The INFOFISH Trade News is a fortnightly newsletter that costs US$520 per annum; the organisation also offers subscriptions to the GLOBEFISH Seafood Highlights and the European Fish Report.

Timely trade news on bar coded seafood is gathered by the Nielsen Company from retail sales scanning at major supermarkets. These data can be very precise and very timely but they are also very costly and a small customised report or regular update subscription on a few nominated products typically costs thousands of dollars.

4.1 Australian Fisheries Statistics And Import Data

The Australian Bureau of Statistics (ABS) compiles Australian Customs import data on volumes and landed cost by country, and port of landing, for each month, for various species or commodity groups which have an international trade classification number.

The ABS classifies imported goods according to a ten digit hierarchical **Harmonised Tariff Item Statistical Code** (HTISC) number; the hierarchical nature of this system, the commodity classifications and the HTISC's harmonisation with other commodity classification systems in use around the world are discussed in the ABS publication 5489.0 (2001).

The seafood commodity groups or species which have an HSITC are listed in the box on the following page; basa and barramundi and many other species are not shown in this as they do not have a HTSIC and consequently there are no official statistics compiled on these species, despite the large and growing volumes of basa traded globally in the past few years. The ABS has regular statistical publications but it also offers subscription and consulting services whereby information can be ordered tailored to suit client needs.

Care needs to be taken when consulting statistical data to ensure that the category heading or commodity code number is indeed the one sought after; particularly when perusing a time series of data where it is possible that category headings or code numbers have changed from one year to another.

The Australian Bureau of Agricultural and Resources Economics and Sciences (ABARES) publishes its Australian Fisheries Statistics annually. This is probably the most widely consulted and quoted source of statistical data.

The ABARES fisheries statistics yearbook has typically been published sometime between July and August with statistics on the financial year concluding on the 30th June of the previous calendar year; ABARES however releases an Australian Commodity Statistics book in December each year which summarises many of the import and export figures for the recently concluded financial year.

ABS Fisheries Import Statistics

The ABS compiles fisheries import statistics on the specific groups listed here. The level of detail available varies with the specific group: prawns and hake fillets for example have eight different product categories while others (eg cuttlefish) may only have a couple.

Anchovies
Trout
Salmon
Carp
Coalfish
Cod (Gadus species)
Dogfish and other sharks
Eels
Haddock
Hake fillets
Halibut
Herring
Mackerel
Plaice
Sardines
Sea bass
Sole
Swordfish
Toothfish
Tunas Albacore or longfinned tunas
Yellowfin tunas
Skipjack or stripe bellied bonito
Big eye tunas
Southern bluefin Tunas

Abalone
Rock lobster
Lobster (Homarus species)
Shrimps and prawns
Crabs
Freshwater crayfish
Oysters
Scallops
Mussels
Cuttlefish
Squid
Octopus
Snails

4.2 Prawn Statistics

The Australian Bureau of Statistics has compiled prawn import data on volumes and landed cost by country, and port of landing, for each month, going back more that ten years, for eight categories of prawn products; three ***Frozen*** categories, three ***Not Frozen*** categories and two ***Prepared or Preserved*** categories of products.

HTISC Code Numbers for Prawns or Shrimps grouped accord to level of preservation/processing:

Frozen prawn categories

0306 13 00 40 Frozen shrimps and prawns, head on and tail on, in shell, cooked by steaming or by boiling in water.

0306 13 00 41 Frozen shrimps and prawns, uncooked, farmed, whether in shell or not

0306 13 00 42 Frozen shrimps and prawns, uncooked, not farmed, whether in shell or not

Not Frozen prawn categories

0306 23 00 60 Shrimps and prawns head on and tail on, in shell, not frozen, cooked by steaming or boiling in water

0306 23 00 61 Shrimps and prawns uncooked farmed, not frozen, whether in shell or not

0306 23 00 62 Shrimps and prawns uncooked not farmed, not frozen, whether in shell or not

Prepared or preserved prawn categories

1605 20 00 18 Prepared or preserved shrimps and prawns packed in air tight cans, bottles, jars or similar containers

1605 20 00 19 Prepared or preserved shrimps and prawns not packed in air tight cans, bottles, jars and similar containers.

These prawn product categories are simply referred to by the last two digits throughout this report (eg….19 or P19).

Earlier HTISC code numbers, which were used in the 1990s (but have been replaced by some of the above codes) and the date of their deletion from the Australian list are given below.

0306 13 00 03 Frozen shrimps and prawns (uncooked) whether in shell or not; Frozen shrimps and prawns in shell cooked by steaming or by boiling in water. DELETED 31/12/00

1605 20 00 05 Shrimps and prawns, potted or concentrated, (incl extracts or pastes) DELETED 30/6/99

1605 20 00 06 Prepared or preserved shrimps and prawns packed in air tight cans, bottles, jars and similar containers (excl potted or concentrated extracts or pastes). DELETED 30/6/99

1605 20 00 07 Prepared or preserved shrimps and prawns (excl those packed in air tight cans, bottles, jars and similar containers and potted or concentrated, extracts or pastes) incl frozen cooked shrimps and prawns not in shell. DELETED 30/6/99

0306 23 00 09 Shrimps and prawns, fresh or chilled, whether in shell or not. DELETED 31/12/00.

4.3 Australian Official Import Data Type And Quality

4.3.1 ABS Categories

The ABS edible seafood categories reflect long standing international agreements and so they are northern hemisphere and wild catch dominated and classified according to the level of preservation/processing. Some are outdated or meaningless for Australian use; the omission of major trade items like basa from the list and its classification in the “other” fish category now seems strange.

Many categories are so broad that the figures are almost meaningless, the prawn category ***preserved or prepared, not in cans*** includes wet marinated products, crumbed/battered prawns and dim sum type prawn products, all vastly different (see discussion following).

Another weakness with these broad categories is that a particular item may be classified in more than one code by different persons because each customs agent interprets the description for the HTISC and selects the most appropriate category for the goods.

Major product volume changes within a particular classification category, with significant trade, cultural or quarantine implications, may arise and go unnoticed for an overly long time with the prevailing broad classifications.

4.3.2 Reliability And Timeliness of Australian Official Statistics

ABS statistics available gratis are not timely enough for business use, but monthly data can be had on a subscription basis for a moderate sum (typically more than $500 per annum or per job). The ABARES yearbooks are commonly regarded as having information that is dated and limited value for business use, but they are nevertheless well regarded because they provide good time series of data as part of a free annual report.

It is difficult to assess the overall reliability of the ABS data with some confidence given the vast amount of data that are regularly compiled and published by ABS and ABARES. Several industry users made general comments about a lack of confidence in the data but no specific detailed examples were offered.

A number of anomalies in the ABARES yearbooks have apparently been noticed by various readers eg volumes of scallops that had purportedly been incorrectly recorded as Australian exports but were exports of scallops that had earlier been imported into Australia. This and other anecdotes were not able to be verified.

Thai Customs data on shrimp/prawns exports were found to be consistent with ABS import data considering the inherent limitations that exist because of

shipment time: exports from Asia in June of one financial year can arrive into Australia in the beginning of the next financial year.

The Vietnamese export data on *Pangasius* (basa) was also consistent with ABARES data on imports from Vietnam, recognising the limitations noted above. Almost all of the New Zealand Seafood Industry Council statistics were also found to be consistent with ABS/ABARES statistics, with a couple of exceptions described below.

One of the notable features of the ABARES Fisheries Statistics yearbooks is that they have been following the same format or template for more than a decade and some categories and labels are outdated while some countries included in various tables year after year with zero numbers when it is now evident that this zero status is unlikely to change in the future.

4.3.3 Apparent Discrepancies And Anomalies

A number of anomalies/mislabelling in the ABARES yearbooks were noted during this study.

The New Zealand Seafood Industry Council export statistics show 121 tonnes of frozen hake fillets at NZ$11.02 per kilo exported to Australia in 2008/9 while the ABARES yearbook shows 1164 tonnes at A$4.96 per kilo was imported from New Zealand in that period.

The exchange rate of A$1= NZ $1.23 does not explain the vast difference in pricing information and the transit time between Australia and New Zealand would not account for the huge discrepancy in the recorded volumes traded.

It is impossible to assess the reasons behind this lack of consistency given the privacy regulations that apply in both countries; it is impossible to even get informal guidance on what may be happening with particular imports from AQIS.

Prawn Import Classification And Labelling

The import statistics on the eight prawn tariff code categories described earlier are aggregated and published in the ABARES Fisheries Statistics yearbooks under the following category headings, since the 2000 report. (A different arrangement was used in earlier reports, in the 1990s and so need to be read with care):

- ***fresh, chilled or frozen*** (in Table 29, 31 and 36 in the 2008/9 report)
- ***canned and preserved*** (Table 31)
- **canned** (Table 36).

The volume and value figures under the ***canned*** heading in Table 36 (in 2009 and back to 2000, with different table numbering in the early 2000's) are misleading as they are actually the aggregate of the **Prepared or preserved**

in air tight cans (HTISC code no 1605200018) and the **Prepared or preserved, but not in air tight cans** category (1605200019) as indicated correctly in Table 31.

The data presented for **canned** in ABARES Table 36 therefore hugely overstates the canned volume and values and masks the volume and value of the **prepared or preserved prawns not in air tight cans**, which includes processed frozen product. These mistaken figures are also evident in the Australian Commodities Statistics yearbooks. This has undoubtedly led to incorrect statistics being used and quoted in many reports and studies.

This mislabelling anomaly has been bought to ABARES' attention and corrected in time for the 2009/10 yearbook, as have the following anomalies.

The same erroneous situation seemingly prevails for the **canned crustaceans and mollusc** category in Table 29. The category **Canned crustaceans and molluscs** for each country in Table 38 show very high tonnages suggesting they are a sum of the **canned** and the **prepared or preserved** tonnage and not just **canned**.

Squid Statistics

Table 36 in the 2008/9 Fisheries Statistics (ABARES 2010) has the heading **Calamari, squid and octopus.** Table 38 shows the same figure of 3335 tonnes for **squid** alone.

This tonnage is actually the aggregate of cuttlefish (HTISC code 307410018 fresh/chilled and 307490019 frozen), squid (code 307490019 frozen) and octopus (307510021 fresh/chilled and 307590022 frozen). This error is also evident in earlier years' yearbooks.

4.4 Overseas Sources Of Statistics

The type and quality of information available internationally and from Australia's major trading countries vary considerably, as summarised below.

International World Trade Centre publishes a myriad of international trade data on its website http://www.trademap.org/ but this is aggregated data on major commodities and given that an expensive paid subscription is required for any meaningful search it is not an attractive source of information. Furthermore it uses an 11 digit commodity code number and this necessitates preliminary searching to ascertain the required code number for the item of interest.

It may however prove more useful, if wanting to access specific commodity data on multi-country trading.

4.4.1 Thailand

Information on exports and imports can be obtained from the Thai Frozen Foods Association (TFFA) web site http://www.thai-frozen.or.th. The numerical and graphical data the TFFA offers have been compiled by the ***Information and Communication Technology Centre***, with the cooperation of the Customs Department. The site usually carries the most recent two months data (January and February on view in May) as well as annual data (calendar year) going back to 2006, for the major commodities.

The data is restricted to major seafood commodity groups such as fish, fillets, shrimp and cephalopods and main trading countries (which includes Australia) and is mostly aggregated according to the tariff code categories such as fresh, chilled and frozen, and the prepared and preserved (including canned) categories.

The data is offered in a pdf format only but there is considerable data available for shrimp and fish exports; the latter for example has a 27 page document with tables and graphs of monthly volumes and values (baht and US$) data on, tuna, tilapia and surimi as well as an all fish species combined category. There are frequently graphs or numerical data showing the comparison with the previous corresponding period. Volumes are recorded as ***tons***, but our enquiries revealed that they are in fact ***tonnes*** (1000 kg).

The Thai Customs Department website (www.customs.go.th) can also be searched directly with relative ease for more detailed information. This web site can be rewarding for species where the international code number is known but it can at times be problematic even with species where there is no confusion or ambiguity about the code number.

In short this source has timely information but it is limited in scope; from our limited use with this website the data has proven to be reliable.

4.4.2 Vietnam

The Vietnamese Association of Seafood Exporters and Producers (VASEP) has a Statistics Section on its web site which can be accessed by members (All exporters are required to be members of VASEP as part of the national government requirements to export seafood). Access to this statistical data can be arranged with VASEP.

This web site carries a varying assortment of monthly, half yearly and calendar year data in pdf tables, all posted about four months in arrears. This web site covers the major commodity groups such as shrimp, squids, Pangasius (ie basa), tuna and dry seafood as well as the total national aggregate figures for all seafood combined. Accessing these statistics can be a little difficult, sometimes exceedingly so, for short periods at times.

In short this source has timely information but its product range is limited; from our limited use with this website the data has proven to be reliable.

4.4.3 New Zealand

The New Zealand Seafood Industry Council's (SIC) website www.seafoodindustry.co.nz offers detailed monthly statistics on all exports to most countries. The statistics cover the volume and value of specific products eg hoki headed and gutted, whole, fillets etc.

The preliminary statistics have been collected by Customs and supplied to SIC by Statistics New Zealand just two months after the month has expired and final figures are available every three months. Aggregated annual data is available gratis but detailed information can be purchased for a modest sum.

The New Zealand SIC charges NZ$195, minus 15% GST for non residents, for a subscription offering an annual full country report with export volumes and value on all species/items as well as access to the archives for that report, plus each month's new report. The data is available as a pdf file or Excel spreadsheet.

The New Zealand SIC material in a pdf format is easy to work with, very timely, reliable and good value for money. (Extracts from a pdf file with the information for snapper, and other species, are shown in the Appendix section). The Excel file however may prove difficult for persons not familiar with working with a large data base.

4.4.4 China

A Chinese agency China Customs Statistical Information Service, based in Hong Kong, offering subscription to Chinese trade data based on the 8 digit Harmonised System code was discovered at the time of writing via the newly established Fisheries Trade Data Organisation's website (www.fisheries-trade-data.org).

While the prices quoted for access to data were reasonable (US$30 and up) the internet based order procedure was difficult and we were unsuccessful in our attempts to gather Chinese seafood export statistics.

Given that the Chinese data is based on the 8 digit international code it would appear that the agency can only offer aggregated data on the major commodities such as shrimp, squid etc in the same way as similar agencies or organisations elsewhere. One of its attractions is that it claims data is available only one month after the expiry of the month.

This agency offers remarkably timely information but we cannot comment on the site without any first hand experience.

4.5 Getting Better Australian Import Data

There has been considerable latent industry interest in getting “better” import statistics but there has been little active interest or discussion in industry or government until very recent work by Seafood Services Australia with its Trade Access Forum (TAF).

Seafood Services Australia has been focussing on export matters with the TAF, but it is currently working with ABARES/ABS with the aim of making more timely import and export statistics available on the SSA website at minimal cost to industry.

Within the import sector there were widely differing viewpoints on the use and purchase of statistics but mostly little willingness to pay any more than a nominal sum for official statistics, which are considered far out of date for effective business use.

Only a handful are regular users or subscribers to ABS statistics — the Excel Pivot tables are a little daunting for persons not familiar with these — and a similar number consult the ABARES annual reports or overseas websites; most have been content to rely on their business partners or other industry connections for timely information.

ABARES yearbooks have followed the same template for a decade or more and include some species/country combinations that have little relevance to contemporary trade and a review of the fisheries statistics collated and published is warranted.

There are however so many costs, benefits and trade-offs, some highlighted by the ABS advisory notes on the following page, that need consideration in designing a better import (and export) fisheries statistics collection, collation and dissemination system that **a national workshop is recommended to government and industry for joint execution**.

Changing the ABS Statistical Codes

The following account comes from information extracted from ABS (2001).

The Australian Bureau of Statistics has the responsibility for maintaining all aspects of the statistical code components of the HTISC. It evaluates requests from users of the system to update classifications: creation of a new statistical code or change the level of commodity information made available, by changes to the last two digits.

The seafood industry can therefore make a submission for changes to the classification of seafood to add "new species" such as basa or barramundi as the ABS regularly considers requests where they are deemed to be in the interests of industry concerned as well as in the public interest and have the support of the relevant government department/or industry association/authority.

Requests of a purely market research nature are not considered.

The ABS publication 5489.0 (2001) gives full details on what is required for it to undertake an initial feasibility study to determine the likelihood of the proposed changes being implemented. Based on the findings of the initial feasibility study the ABS advises the organisation making the request whether it is willing to undertake a more detailed Classification Feasibility Study (CFS).

Charges apply for both the initial investigation and the detailed CFS (where one is undertaken).

In attempting to satisfy the statistical needs of a wide range of users, the ABS strives to keep these classifications comprehensive, detailed and current. At the same time it is necessary to limit the size and complexity of the classifications in order to minimise reporting problems and compliance costs for importers, exporters and their agents. Account must also be taken of the ongoing costs to the ABS associated with editing and processing the data and in maintaining the classifications (ABS, 2001).

5. COMPOSITION OF THE SEAFOOD IMPORT SECTOR

5.1 Business Types And Numbers

Telephone enquiries after electronic and literature searches, and in-store observations on products offered for sale in the capital cities, located 82 businesses as importers of fresh or frozen seafood. There are undoubtedly more companies importing that were not located and most of these are likely to be small scale operations.

Fourteen of the 82 confirmed importing businesses contacted did not want to participate in the study at all; the other 68 can best be described as:

- Very large importing companies, some with export activities, frozen goods only, selling to food distributors and seafood wholesalers.
- Global seafood traders, buying and selling very large lots, some transactions completely offshore with multiple containers going direct from one country to another
- Seafood importers-food distributors
- Seafood wholesalers, importing frozen and fresh; some companies importing fresh only
- Importer-manufacturer-food distributors
- General food importer-distributor and small scale seafood importers specialising in particular product types or particular ethnic specialties.

These descriptions are of necessity somewhat arbitrary because distribution chain functions have blurred over the past twenty years and some companies are vertically or horizontally integrated. Numerical information on these categories cannot be provided because of business confidentiality given the small numbers in several categories. But they can be classified according to product category/typical activity as shown below.

Frozen seafood importers	57%
Fresh seafood importers	18%
General food importers or occasional seafood importers	15%
Fresh and frozen seafood importers	10%

The majority of businesses in the frozen importer category above buy and sell Australian products too but imports are invariably the predominant part of their business. With fresh seafood importers the situation is the reverse with imports typically making up the minority of the overall business activity.

Seafood Services Australia's Australian Seafood Industry Directory of August 2001 listed 80 businesses operating as importers, the April 2008 Directory listed 53 importers while the April 2010 edition had 56. Phone or email contact with the companies in the latest directory indicated:

- 16% in the 2010 Directory were not in fact direct importers of edible seafood; they never were or had ceased to do so

- 4% of those listed in 2008 and in 2010 had a telephone number that was inoperative and the business assumed to be no longer operating in February 2011

- there has been an attrition rate or loss of about 40% of importing businesses over the past decade. This is consistent with anecdotal evidence of a loss of about 10% in the past two years.

Prawn importing became more complicated in September 2007 with new restrictions and testing protocols for raw prawns and so some of the smaller scale importers of prawns dropped out and now buy from larger importers who are better placed to manage the more costly process.

Seafood Importers Association Of Australasia Membership.

Twenty seven of the 68 active importers participating in this study in some way were members of the Seafood Importers Association of Australasia, (SIAA) whose membership consists predominantly of mid and large scale importers of frozen seafood.

The SIAA represents and promotes the interests of the import sector in government and industry meetings, and committees, and works to strengthen the image of imports in the face of negative publicity about imports.

In the past few years with the employment of a part time Executive Officer the association has been active in rebutting unwarranted criticism with media releases and the organisation of overseas tours to allow seafood buyers and media the opportunity to examine overseas aquaculture and processing plants themselves.

The SIAA has also worked closely with the Thai government and industry organisations to promote Thai seafood in Australia at trade shows and special functions.

5.2 Business Size And Geographical Location

There are no formal qualifications or regulatory barriers to anyone wishing to obtain an import permit for seafood for business or domestic use, but a CSIRO review of testing protocols for imported seafood by Moir (2009) recommended that importers should be registered.

The scale of the frozen seafood importing activities ranged from the very large (> 5000 tonnes per annum) companies with offices and/or staff in several states to the opportunistic businessman on-selling an occasional container each year and the general food distributor regularly importing a pallet or two of specialty seafood items for sushi use or another ethnic inspired dish.

The size distribution of the annual import volume for companies dealing with frozen goods are shown below. These data need to be handled with care because of the small sample size (40 businesses).

Size scale	V. Small	Small	Medium	Large	V. Large
Tonnes/year	< 100	101-500	501-2000	2-5000	>5000
% of firms	10	20	32	18	20

The medium and larger companies typically had been established for long periods (> 20 years) and had long standing relationships with overseas suppliers and customers in Australia; the family owned businesses typically had more than one generation at work in importing or other functions such as wholesaling or retail and extensive seafood marketing expertise.

The larger companies distributed many of the strong selling foreign brands and/or had developed their own company brands for many of the goods they sold and they could also arrange packing of goods in private label packs for Australian customers.

The larger/longer established companies were also active in supplying the supermarket chains as well as other importers and major seafood wholesalers and their product range covered trade packs for the seafood retailers and food service businesses as well as small retail packs or catering packs.

The vast majority of importing businesses are located in the capital cities; only six were located in regional centres, in four states.

The geographical distribution of the business head office location is tabled on the following page. This shows that the distribution of businesses is essentially a reflection of the population in each state, with most in NSW.

Table 1. Geographical location of seafood importing businesses.

State	% of national total
NSW	41
Victoria	33
Queensland	14
Western Australia	9
South Australia	3

No direct seafood importers were confirmed in the Northern Territory or Tasmania but these states are served by importers in the other states; ABS statistics indicate that only a negligible volume of seafood has a Tasmanian or Northern Territory first port of landing. Tasmanian state laws prohibit the entry of a large range of imported seafood into the state.

The enormous geographical penetration of the food distribution companies around Australia and the ongoing improvement in the seafood counters in the Deli section of the major supermarket chains has made frozen/thawed seafood accessible to the home cook or food service chef in the smallest town or remote mining centres.

Fresh Seafood Importers

In Sydney and Melbourne fresh seafood importers/wholesalers tend to be located on the central fish market property and are suppliers to retailers patronising the market auction as well as food service businesses although the latter largely utilize door delivery of phone orders. These seafood wholesalers import some frozen goods and also buy other imports off specialist import companies.

Other fresh seafood importers in these two capital cities, typically smaller businesses than those inside the central fish market, commonly do not import frozen seafood directly but rely on other importing companies.

The annual import volumes of the dozen fresh/chilled importers ranged from less than 50 up to 1000 tonnes per annum with most at the 5-10 tonne per week level. Most of the fresh seafood is from New Zealand but some businesses are sourcing reef fish and barramundi products from nearby Asian nations such as Indonesia and Malaysia and occasionally fresh fish is sourced from further afield. Fresh prawns from New Caledonia were common in the early 2000s but this trade was effectively closed by the new import restrictions in late 2007.

While the large seafood wholesaler companies importing fresh seafood each week from New Zealand and elsewhere also import some frozen goods the large scale frozen goods importers do not import fresh seafood. These large importers don't see most of the goods they sell because they deal with full container loads that are attended to by customs agents, transport companies and cold storage warehouse personnel.

5.3 Frozen Seafood Range And Intercompany Trading

In addition to the well known commodity type goods such as prawns, blue grenadier (hoki) fillets, squid etc there is a moderate range of low volume highly processed as well as minimally processed imported seafood distributed by businesses best described as general food distributors or grocers.

The size range and composition of the frozen seafood portfolio handled by the importers varies with company size and history. The larger long established companies typically tend to have a large range that encompasses prawn products and high volume fillet such as basa and hoki and often some of the less common products such as tilapia. Frozen barramundi fillets are imported by large and small companies alike although not all of the larger companies necessarily stock barramundi, basa or prawns.

Several mid to larger companies have ceased trading in basa fillets, whole cooked farmed prawns and some raw prawn products in recent years because of the relatively low or declining profit margins in these three categories and the more demanding quarantine arrangements on raw prawns.

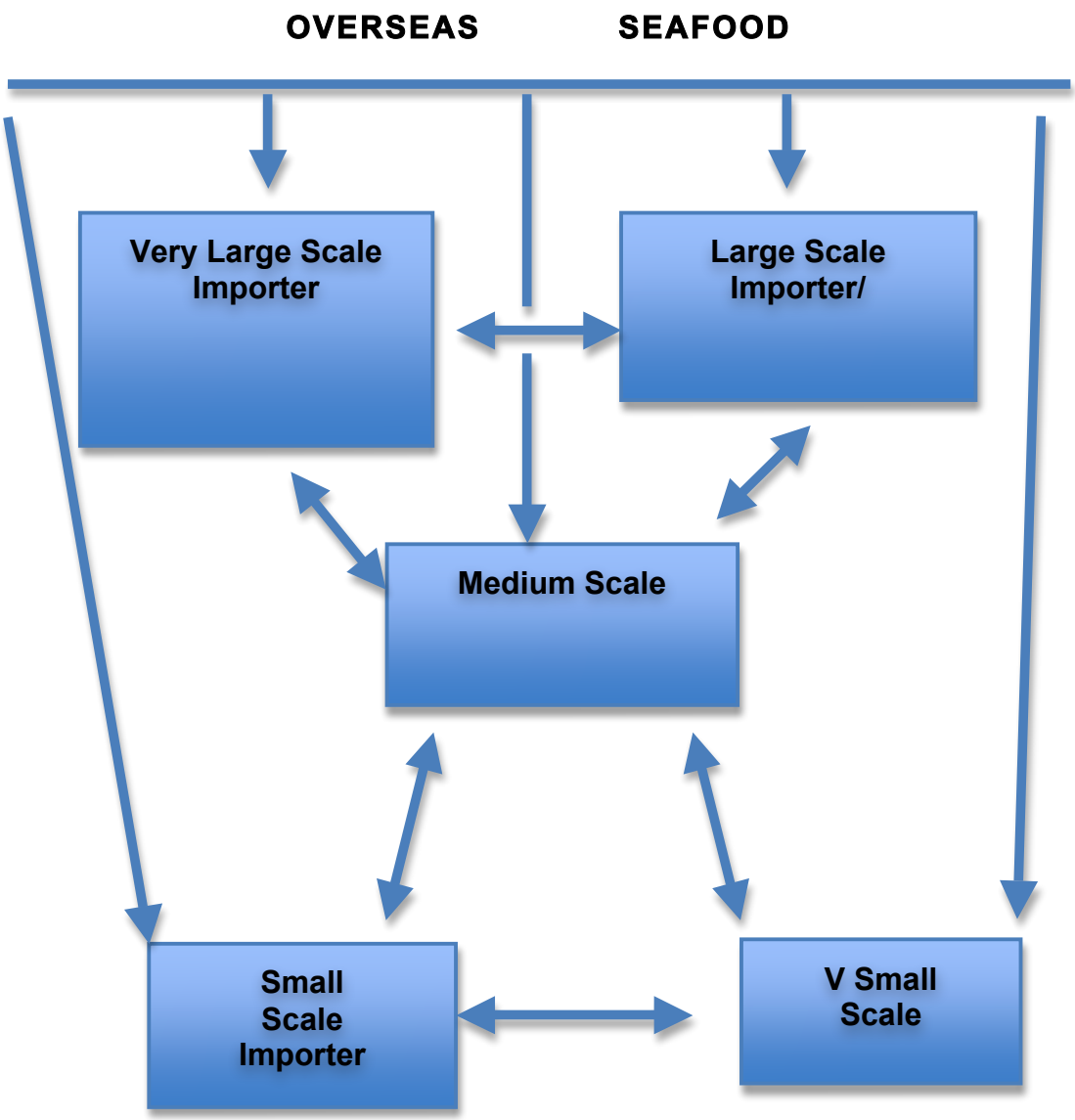
Some companies are well known as specialists in certain species such as hake, prawns or particular ethnic favourites such as milkfish, or focusing on products of a particular nation, such as New Zealand or Indonesia.

While there is ample inter-company rivalry for customers and market share, and price competition between importers, they do trade with each other on occasions or regularly (See flow chart following page).

Medium or small scale businesses regularly buy some items off other companies larger or smaller than their own to fill a need for the particular item they do not import themselves. All companies buy off another company at times to fill a short term need or a supply gap for an item they regularly trade in.

The very large companies may make use of the global trading businesses to fill their need for a particular item. Figure 2 on the next page shows how product may be sold from one company to another (but it should not be interpreted as signifying that product is typically sold along a lengthy chain of companies).

Figure 2. Intercompany trading showing how seafood ***may*** be sold from ***one importer to another*** in Australia. (Note: it should not be interpreted as being sold along a long chain of importers or backwards and forwards).



6. MAJOR IMPORT PRODUCTS AND SOURCES

6.1 National import Statistics 2008/9

Australia has been reliant on imports to help meet demand for human consumption since the 1950s but the diversity of sources and species has grown from less than a hundred species, predominantly from New Zealand, European and American fisheries to about 250 species from the Asia-Pacific, European, African fisheries and aquaculture.

These changes are a reflection of changing wild catch fisheries, the rapid expansion of aquaculture, the widening ethnic origins of the Australian populace and the increasing acceptance of foreign foods and cuisines.

Import volumes have grown steadily over the past decade and reached 207.6 thousand tonnes in 2009/10, with a $124.57 million landed cost, according to preliminary ABS data (this aggregate volume was 7.3% higher than the previous year but total value fell marginally). Detailed data on the more important categories (>2000 tonnes) are available for the financial year 2008/09 and these are tabled below.

Table 2. Australian fisheries (edible) imports*.
Financial year 2008/9

Product category	Volume tonnes	Value $'000	Average $/kg
FISH			
Canned fish	54132	331171	6.12
Frozen fillets	40769	238866	5.86
Other fish preparations	18445	106578	5.78
Fresh or chilled whole	7218	55099	7.63
Frozen whole	5816	22316	3.84
Other fresh chilled or frozen	2790	13285	4.76
TOTAL FISH**	133558	824617	6.17
CRUSTACEANS & MOLLUSCS			
Fresh chilled or frozen			
Prawns	26270	264272	10.06
Scallops	2170	29889	13.77
Mussels	2783	12007	4.31
Calamari, Squid & octopus	16829	54286	3.23
Canned & preserved. Other mollusc	6641	40878	6.16
TOTAL CRUST. & MOLLUSCS**	59899	458091	7.65
TOTAL	193458	1282709	6.63

*Extracted from ABARES Fisheries Statistics 2009 (ABARES 2010), from the detailed tables with disaggregated data where available (table 30 on, rather than in Table 29, because of discrepancies observed (as described for prawns in chapter 4).

**The total shown for Fish and for Crustaceans are larger than the sum of the figures above it, because several smaller volume categories (< 2000 tonne) are not listed.

The various category headings " Other …" include a myriad of species and products, such as *beche de mer* (sea cucumbers), that are individually imported in smaller quantities and lumped in the miscellaneous/other categories.

These and other aggregated ABS data also give no indication of the growing level of highly processed and ready to eat/cook packs of seafood common in global trade today.

According to the figures shown in table 2:

- Canned fish represented 28.0% of the overall imports
- Frozen fillets were next important with 21.1%
- Fresh, chilled and frozen prawns made up 13.6%
- Fresh, chilled and frozen calamari, squid, cuttlefish and octopus 8.7%
- Other fish preparations 7.3%

These rankings of the top five categories are essentially the same as in the preceding few years and are unlikely to change in the 2009/10 figures, but there have been significant changes amongst the species/products within these broad categories as discussed later.

The fish balls and fishcake category is a small but noteworthy category having almost doubled in volume over the past four years and achieved a price rise of 25% per kilo, a reflection of the increasing Asian impact on population demographics and food tastes in Australia.

6.2 Import Contribution To Supply And Consumption

The 193,000 tonnes of imports were calculated as representing 49.9% of the aggregate fish, crustacean and mollusc supply tonnage available for consumption in the country (production minus exports, plus imports) when using the 2008/9 fisheries and aquaculture production, export and import tonnages (ABARES 2010) [which are recorded as whole weight for domestic production and product weight for exports and imports, in table 2 and on next page].

However this simple supply tonnage approach takes no account of fish filleting losses and other factors such as Australian fish used as feed in aquaculture or as bait and therefore does not provide a useful guide to the proportion of imported seafood flesh actually consumed by humans.

A detailed analysis of the disaggregated production, exports and import volumes taking account of flesh weight, as shown on the next page indicates that **imports make up 72% of the "flesh weight"** of the total of all Australian and imported seafood consumed in the country in 2008/9.

When the 54,000 tonnes of canned fish is excluded from the data the imported seafood flesh represents 64% of the "remaining" total consumption volume of 198,000 tonnes of flesh. (The volume of canned crustaceans and molluscs is negligible for this exercise).

Australian Fisheries Supply And Consumption Balance Sheet 2008/9

DOMESTIC SUPPLY (Production Minus Exports)

Australian production of *FISH* (wild + aquaculture, whole weight)		165, 026 t
Less exports (whole weight value. [Note 1].)	30,903	
Less Australian sardines used as animal feed and bait	30,000	
Balance whole weight fish available for human consumption		104,123
FISH flesh weight After filleting losses,		**57,061**

Crustaceans & Molluscs Australian wild + aqua. whole weight	75,889
Less exports (whole weight figures)	46900
Balance whole weight available for human consumption	28988
Crust & Mollusc Flesh wt. after deheading/shelling	**14494**

IMPORTS SUPPLY

Fish, product weight tonnage,	133558
Fish Edible flesh weight (Note 1)	**127,040**
Crustaceans and molluscs product weight	59900
Crust. & Mollusc Edible flesh weight (Note 1)	**53500**

Total edible flesh fish, crustaceans & molluscs **Australian**	**71,555**
Total edible flesh fish, crustaceans & molluscs **imports**	**180,540**
TOTAL CONSUMPTION	**252,095** tonnes

Hence imports are **71.6 %** of national total consumption volume.

Notes

1. Australian production is recorded and mostly sold as whole weight, and where so, were converted to flesh weight. Typically, waste was calculated as 50% for fish filleting or prawns' heading and peeling; 30% for salmonid fish, 75% for oysters and 67% for scallops.
2. Flesh weight of canned goods was taken as nominal weight ie no allowance was made for sauce filling weight.
3. Imports of whole fish etc were converted to edible weight figures using recovery rates noted above for Australian product.

6.3 Major Countries And Key Products

The four largest national sources of imports in 2008/9, all with non-canned product volumes greater than 10,000 tonnes (ABARES 2010), were:

1. Thailand
2. New Zealand
3. Vietnam
4. China

This was slightly different to the previous year when Vietnam was fourth and China was third, because Vietnam's prawns export volumes have increased faster and China's domestic consumption is growing. The next four most important sources of imports are: Malaysia, United States of America, Indonesia, and South Africa, in that order.

The table below summarises the major or key products sourced from the four leading countries in 2008/9. **Thailand contributed 30.5% of the total import volume** and their landed cost was 28.7% of the total cost in 2008/9. These four leading countries collectively account for almost all of the tonnage of the four most voluminous import categories (ie canned fish, fish and fillets, prawns and cephalopods [squid, octopus and cuttlefish]).

Table 3. Volume and value of key imports from the four major sources*

Country	Total volume tonnes	Total value $'000	Major exports to Australia
Thailand	59076	368223	Canned fish (principally tuna), frozen prawns and various frozen prawn products.
New Zealand	34397	208533	A variety of frozen fillets, and fresh whole fish; "other fish preparations"; frozen squid, squid products and mussels.
Vietnam	25537	167371	Predominantly frozen basa fillets and frozen prawn products. Octopus. Barramundi
China	23805	152140	Frozen prawn and squid products and frozen scallops.

Extracted from ABARES Fisheries Statistics 2009 yearbook (ABARES 2010).

Prawns, basa and barramundi imports are discussed at length in the specific chapters on these three seafoods.

6.3.1 Thailand

Thailand's exports to Australia are dominated by canned fish, principally tuna, and by prawn products. Thailand has become the world's largest supplier of canned tuna and for most years the largest supplier of prawn/shrimp products to the world. Australia is but a small customer for Thai output of both these commodities.

Thailand is the world's leading tuna packer, a major manufacturing hub, selling its own brands but it is not the major driver of tuna sales. The overseas partners/buyers, marketing world famous brands mostly undertake the market development and promotion and the consumer research that has led to innovation and increasing sales volumes (see Box next page).

Thailand's major export volume and values to Australia in the past three years are shown below.

Table 4. Principal imports from Thailand 2006/7 to 2008/9 *

	2006-07		2007-08		2008-09	
	t	$'000	t	$'000	t	$'000
Thailand						
Frozen whole fish	491	1 170	163	391	42	172
Fillets	102	1 306	122	1 620	33	465
Canned fish	36 373	150 631	39 326	177 728	40 442	235 443
Smoked, dried or salted fish	56	337	56	317	62	454
Other fish preparations	4 818	15 375	5 630	17 186	5 697	23 510
Prawns	5 503	48 231	4 695	38 617	3 756	35 521
Lobster	155	2 285	175	2 349	69	1 132
Scallops	365	4 695	293	2 796	197	2 258
Mussels	12	40	11	31	3	9
Canned crustaceans and molluscs	4 463	32 596	4 860	31 981	5 255	46 911
Other crustaceans and molluscs	2 572	12 683	2 407	11 190	2 110	12 194
Extracts and pastes	0	0	0	0	0	0
Other	1 784	9 483	2 097	11 134	1 410	10 153
Total	56 695	278 831	59 834	295 340	59 076	368 223

*Extracted from ABARES (2010). Note the comment in the following paragraph regarding the statistics on **canned crustaceans and molluscs.**

The prawn trade between Thailand and Australia is covered in detail in chapter 8 and later in this report but it should be noted that the 5255 tonnes of ***canned crustaceans and molluscs*** is mostly ***Prepared or preserved prawns not in air tight cans*** as noted earlier in Chapter 4.

The **other fish preparations** category is a miscellaneous one, which includes a multitude of processed and prepared fish products from diverse species but information on this is effectively unavailable. The ***Other crustaceans and molluscs*** category includes almost 600 tonnes of Octopus. Thailand has been one of the top three foreign sources of Octopus, after Vietnam, over the past few years as shown in the section on Vietnam, following.

The Thai imports of 59000 tonnes equate to approximately 53000 tonnes of edible flesh or **21% of Australia's seafood consumption volume**.

The Quiet Success Of Canned Tuna

Canned fish's popularity, particularly tuna which made up 70% of canned fish imports in 2008/9, is attributed to its widespread availability and enjoyment by family and friends, its quick and easy versatility, relatively low price and perceived high value regardless of price category.

Fish preserved in metal cans, plastic pouches or in glass jars makes for a delicious meal or a handy nutritious snack depending on the particular item. The price of canned tuna ranges from less than $5 per kilogram for an Australian supermarket home brand (below) to more than $25 per kilogram for a gourmet label; all packed overseas, predominantly Thailand.

The canned tuna at $1.89 for 425 gram) of ready to eat skinless boneless fish (above) meets the needs of the budget conscious shopper while those with greater capacity to pay can choose from a plethora of products preserved under various sauces, condiments or oils in beautiful glass jars.

The Simplot Australia company with its famous John West brand has been a major driver in product innovation (see below) and marketing of canned tuna.

6.3.2 New Zealand

New Zealand has been a steady supplier of fresh and frozen fish and fillets to Australia (table below) and continues to be a major source of wild caught fish and frozen squid as well as the predominant supplier of the green shell mussel products. It is Australia's largest supplier of the fresh, chilled and frozen fish category in volume and value terms and the second most important supplier of raw squid products.

Fish products make up more than half of the volume of New Zealand's seafood trade to Australia. Frozen fillets from New Zealand contribute almost a quarter of the 2008/9 fillet intake from overseas (after Vietnam). This was principally blue grenadier (hoki) at 4104 tonnes (NZ Seafood Industry Council statistics NZSIC) and 1164 tonnes of hake (ABARE statistics).

Table 5. Principal imports from New Zealand 2006/7 to 2008/9

	2006-07		2007-08		2008-09	
	t	$'000	t	$'000	t	$'000
New Zealand						
Fresh and chilled whole fish	5 864	42 816	6 302	49 574	6 707	52 508
Frozen whole fish	1 908	7 550	2 323	10 054	2 422	9 791
Fresh and chilled fillets	284	3 266	336	3 653	302	3 573
Frozen fillets	9 526	58 831	9 916	62 933	9 386	60 748
Canned fish	33	93	5	91	13	162
Smoked, dried or salted fish	194	2 952	253	3 955	256	3 600
Other fish preparations	5 592	28 780	4 615	24 654	5 030	30 222
Lobster	1	39	0	0	0	12
Scallops	1	26	1	28	28	550
Squid	2 997	11 082	2 628	8 499	3 335	7 748
Oysters	827	6 725	717	7 128	790	8 675
Mussels	2 259	9 024	2 169	8 906	2 709	11 581
Canned crustaceans and molluscs	1 855	11 773	1 888	11 174	1 879	11 225
Other crustaceans and molluscs	124	5 333	121	4 969	164	5 107
Extracts and pastes	0	0	0	0	0	0
Other	1 360	4 154	1 832	3 393	1 376	3 033
Total	32 828	192 444	33 107	199 010	34 397	208 533

* Extracted from ABARES (2010)

New Zealand's exports to Australia include more than 65 species of finfish and shellfish as well as processing by products including fish heads, livers, roes, mince and juices. Some species including, John dory and ling, have come in to Australia in seven categories of products (fresh or frozen, whole, gilled and gutted, fillets etc).

Its proximity and its eastern location and time zone enable it to air-freight fresh fish and fillets into the eastern capital cities of Australia in the late afternoon/evening in time for sale the next morning. The annual tonnage is typically measured in the hundreds of tonnes per species but the aggregate becomes thousands per year.

It is not unusual to see some of the fresh air freighted New Zealand products on sale near the same species/products from Australian producers on the Sydney Fish Market auction floor, gaining higher prices than domestic fish. The appearance and eating quality of the *iki jime* snapper exported from New

Zealand is widely regarded as equal to the best Australian snapper in the market. In 2008/9 New Zealand was the source of 8.1 % of the Sydney Fish Market's supply according to its annual report for the year.

Detailed volume and price statistics on selected products including snapper, John dory and ling from New Zealand are presented in Appendix 3a-e.

New Zealand unpackaged seafood on display in retail outlets does not have to have its country of origin or the word imported on its species/price display ticket.

New Zealand has a distinct advantage over other overseas suppliers, of being able to supply many species and products that are very well known to Australian consumers because they are also fished here, moreover without anyone having to bear the cost or inconvenience of food safety testing in Australia.

In the past two decades the strong growth in mussel farming, has added thousands of tonnes of these aquaculture products to its export portfolio for Australia. Detailed statistics on the diversity of mussel products are shown in Appendix 3e.

6.3.3 Vietnam

Vietnam's exports to Australia are overwhelmingly dominated by the volume of fillets (as seen in the ABARES table below) and this is almost all basa, as described in a later chapter on basa.

Other basa products and other species (including barramundi) individually account for relatively small volumes, hundreds of tonnes only, of whole fish or fillets. Vietnam's basa represents approximately a third of the volume of frozen fillets entering Australia in 2008/9.

Table 6. Principal imports from Vietnam 2006/7 to 2008/9.*

	2006-07		2007-08		2008-09	
	t	$'000	t	$'000	t	$'000
Vietnam						
Frozen whole fish	391	1 233	336	1 179	370	1 547
Frozen fillets	11 307	50 304	14 283	53 789	14 495	64 443
Canned fish	236	1 073	328	1 519	317	1 469
Smoked, dried or salted fish	104	543	129	778	112	774
Other fish preparations	499	2 273	549	2 214	648	3 949
Prawns	7 229	85 791	4 856	52 951	2 735	31 736
Scallops	32	366	14	141	29	302
Oysters	0	0	0	0	0	0
Mussels	1	8	0	2	3	15
Canned crustaceans and molluscs	365	3 484	2 101	20 655	4 924	53 271
Other crustaceans and molluscs	1 895	7 253	1 828	6 379	1 564	7 350
Other	616	2 618	652	2 702	339	2 513
Total	22 674	154 946	25 076	142 309	25 537	167 371

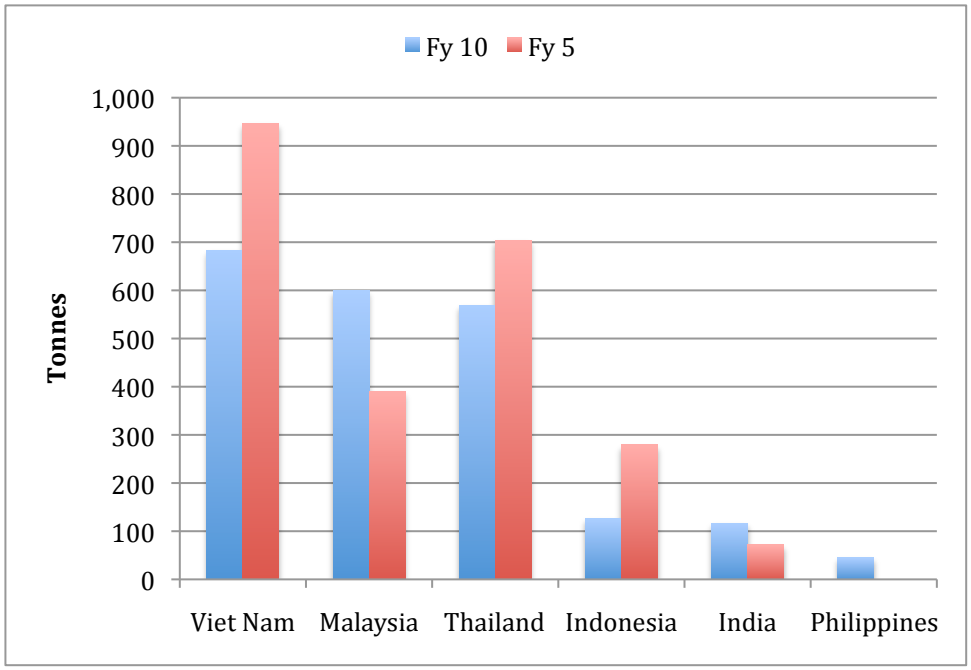
*Extracted from ABARES (2010). Note the comment in the following paragraph regarding the statistics on **canned crustaceans and molluscs.**

Prawns are second to basa in volume terms but of greater importance in value terms than indicated above because they are incorrectly aggregated within the **canned crustacean and molluscs** category. The correct statistics are presented in Chapter 8 on prawns.

Vietnam has been the most important supplier of octopus to Australia for the past five years. Followed closely by Malaysia and Thailand; the small cleaned octopus that dominate this category have increased in popularity over the past decade so much so that demand is now exceeding supply at times and raising prices.

The ABS statistics on the **frozen, dry or in brine** octopus category indicate that average import prices have risen 20% from $2.72 to $3.26 per kilogram in the five years to June 2010 according to preliminary figures. The graph on the following page shows that there has been little change in Australia's aggregate volume of octopus imports over the five year period, this is the result of rising prices due to the global shortage of octopus relative to demand.

Figure 3. Australian import volumes of octopus 2009/10 and 2004/5. *



* ABS statistics, preliminary figures for 2009/10.

6.3.4 China

China's main exports to Australia have predominantly been prawns. But as noted earlier Chinese prawn volumes and ranking fell somewhat in 2008/9, apparently because the demand for Chinese goods declined, as a result of adverse publicity re melamine tainted milk products in 2008. Sales have improved according to preliminary ABS statistics, and Chinese processed prawn meat and tails and scallops are common in retail, restaurants and cafes around Australia.

Another key to Chinese export resiliency is the country's role as a processor of imported raw materials for domestic and overseas consumption. In addition to fish or shellfish produced in China's territorial waters or aquaculture China is also a large and growing exporter of highly processed seafood that was wild caught or farmed in third countries, and later processed in China according to buyer company specifications and packaging.

Wild caught and farmed whole prawns have been processed in China for Australian producer companies and then returned as highly transformed product for sale in Australia; these re-imports constitute very small volumes — less than 50 tonnes in 2008/9 according to ABS statistics and are not discussed any further in this report.

The table below documents the major Chinese imports to Australia, but it has under-estimated the prawn exports enormously because of the ABARES classification anomaly already described. China's prawn exports are described fully in a following chapter on prawns, using disaggregated ABS statistics.

Table 7. China's major exports to Australia 2006/7 to 2008/9*

	2006-07		2007-08		2008-09	
	t	$'000	t	$'000	t	$'000
China						
Frozen whole fish	454	2 234	632	2 281	483	2 480
Canned fish	904	3 828	812	3 353	789	3 828
Smoked, dried or salted fish	43	766	86	1 006	77	1 484
Other fish preparations	931	5 065	1 700	8 720	1 851	10 720
Prawns	8 469	62 122	5 486	36 742	3 484	34 467
Scallops	1 583	16 442	1 114	11 195	1 071	13 447
Oysters	7	87	5	48	19	94
Mussels	3	12	1	11	0	0
Canned crustaceans and molluscs	5 038	31 954	6 845	41 635	6 502	50 849
Other crustaceans and molluscs	5 473	18 087	5 917	14 049	7 213	20 096
Other	4 199	15 161	2 747	14 081	2 315	14 675
Total	27 104	155 759	25 346	133 120	23 805	152 140

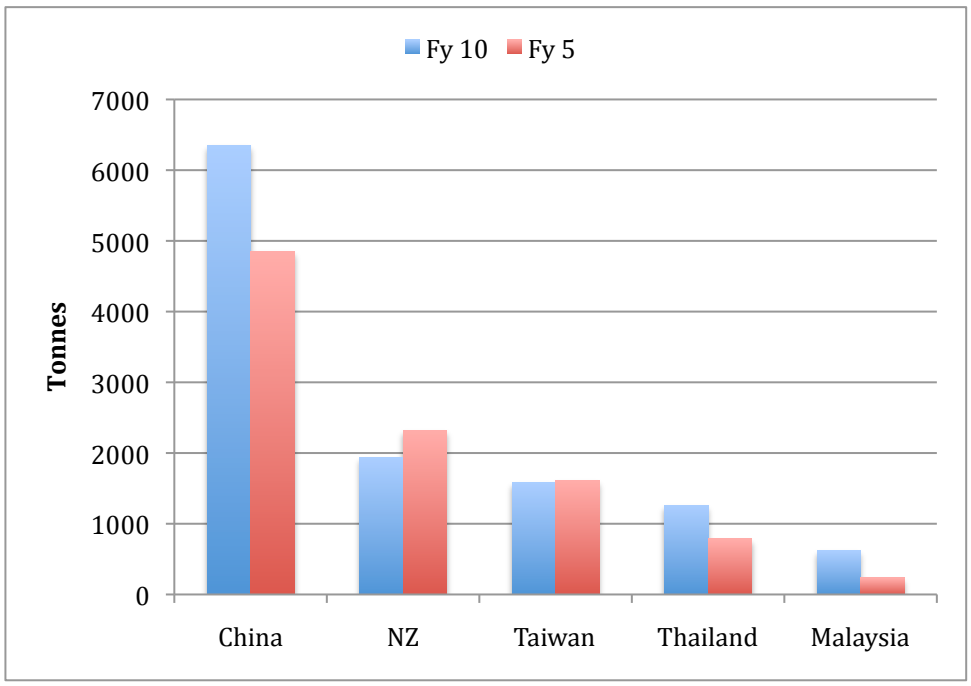
*Extracted from ABARES (2010). Note the comment in the following paragraph regarding the statistics on **canned crustaceans and molluscs.**

For the past five years China has been the major supplier of squid and scallop products to Australia and it is now the source of about half the volume of imported scallops and a third of the imported squid. Chinese and other imported scallops underpin scallop supply and trade particularly in years when Australian production volumes are very low.

The growth of the pineapple cut and the salt and pepper coated squid category in the past few years has helped squid maintain its popularity, and join the menu in a national fast food chain.

The figure below shows a comparison of Australia's squid products imports of 2004/5 to 2009/10 (preliminary figures for HTISC category 307490020); this category includes a diverse range of frozen, dried and brined raw products including whole, head off, wings and tentacles as well as more highly processed lines. Frozen products easily dominate this category, by volume, however.

Figure 4. Squid products import volumes 2009/10 and 2004/5*



* ABS Statistics, preliminary figures for 2009/10.

China's outstanding position relative to its competitors in the squid market has not changed, nor has the relative position of the other five sources of frozen products, but as noted above these exports include material that was caught beyond China's waters and New Zealand squid apparently is a common one.

7. GENERAL TRADE FLOWS AND PRODUCT UTILISATION

7.1 Introduction

The general trade flow and utilisation of the major seafood import categories into retail, food service and manufacturing, and their market outlook, are outlined here but specific utilisation and data on prawns, barramundi and basa are presented in the following Trade Analysis chapters dealing with these species.

The supermarket/grocery chains have the largest number of stores selling seafood and have the largest number of seafood sales transactions but the independent fishmongers in shops and markets probably still outsell the supermarkets in terms of kilograms of fresh seafood and particularly Australian seafood, according to our recent observations and earlier detailed surveys in Melbourne (Ruello & Associates 2005).

In the past few years the two major chains Coles and Woolworths have renovated and enlarged their Deli seafood sections (ie fresh and loose frozen/thawed) doubling the space and product range in some outlets.

The IGA group, with its Supa IGA stores which carry loose seafood in Deli section, have also increased their commitment to seafood but the outcome varies regionally because the IGA stores are privately owned, not company operated.

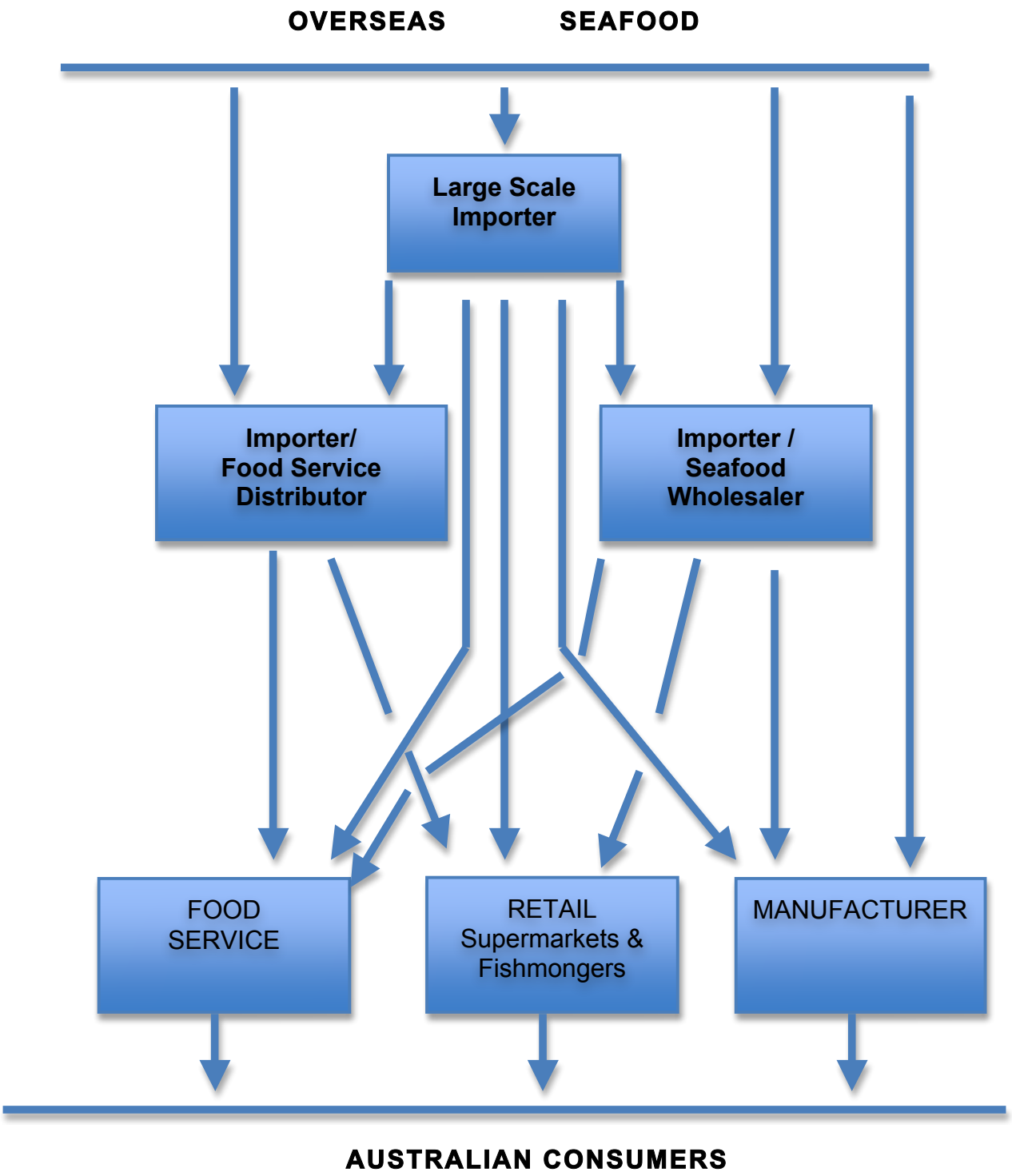
One executive remarked that the vannamei prawns and basa fillet were providing a low cost foundation on which to build their seafood section's performance: as their sales of vannamei and basa built up, store managers gained confidence to introduce the more costly Australian alternatives and more seafood generally into their Deli section.

The independent fishmongers operating specialist seafood stores have a traditional preference for fresh Australian seafood displayed on ice or in refrigerated cabinets and consequently the percentage of imports to their overall product range is noticeably smaller than that seen in the supermarkets. Furthermore much of their imports in the larger eastern Australian cities are fresh New Zealand goods.

The supermarkets, fishmongers and food service businesses get their imported seafood via a common marketing network as shown in the figure on the following page. The major importers supply wholesalers, supermarket chains, the food service companies and other large volume users (including fishmongers); the wholesalers/food distributors on-sell to fishmongers, food service businesses and others, but may also serve supermarket with some goods.

The supermarket buyers source their goods through a small number of preferred suppliers, typically the larger importers, via centralised buying and distribution warehousing.

Figure 5. Common pathways for imports going to the food service, retail sector and to manufacturers. (Large scale retail or food service companies may also import seafood themselves directly).



7.2 Retail Trade Flow And Product Range

Tables 8 and 9 show the number of different species/products on display in the fresh/Deli section of supermarkets and the specialist fishmonger outlets in Cairns, Brisbane and Sydney along with the percentage of imported seafood in the range. The three cities provide contrasting shopping and demographic situations, as follows.

- Sydney: the largest city with a population having little interaction with commercial fishing or farming activities and the greatest assortment of shopping and eating opportunities.
- Brisbane: a smaller population in a capital city with moderate exposure to commercial fishing and farming, partly from a Queensland Catch promotion in 2008, and ample shopping and eating opportunities.
- Cairns a small regional coastal city with a substantial fishing port and a relatively high interaction with commercial fishing and farming and enjoying a medium level of shopping and eating opportunities; also distinguished by a noticeably high number of specialist fishmonger stores and direct sales from fishers. Residents have a heightened awareness of the local industry and Queensland seafood as a result of a well funded three month television and newspaper campaign promoting “Queensland Catch”, ending December 2008.

The data in the two tables clearly demonstrate the higher proportion of Australian seafood in the product mix of the specialist seafood stores throughout Australia, with imports averaging less than 10% in Cairns and Brisbane and 27% in Sydney, whereas in supermarkets imports typically make up more than half of the product range with approximately two thirds imports in Brisbane.

The expansion of the supermarkets’ fish deli business in the past few years has resulted in an increased proportion of imports in the product mix—a rise of more than 50% was noted in a Sydney and a Cairns outlet in less than two years (Table 8, shadowed area), but this does not mean that imports necessarily outsell domestic product in total volume or value.

Also noteworthy is that none of the specialist seafood stores visited in Cairns stocked imported barramundi, basa or vannamei prawns, because they usually were able to procure sufficient local or Queensland products and wished to be supportive of the local producers.

These three imported product categories were available in many fishmongers in the capital cities as the proprietors typically had no reticence about offering them to customers. Vannamei prawns were particularly common in Sydney and Brisbane as were basa fillets, but the imported barramundi less frequently seen. By contrast vannamei prawns and basa have become the cornerstones of a supermarket Deli seafood section.

In short, the general populace and fishmongers in the large capital cities are more price conscious and have far fewer links or knowledge of local fishing or aquaculture activities than their counterparts in a city like Cairns.

Table 8. Product range and percentage of imports, Cairns and Sydney.

Supermarkets

Date	Store	Location	Number in Range	% Imported
CAIRNS				
16 Oct. 2009	B	1	9	22.2
4 Feb 2011	B	1	17	35.3
23 June 2011	B	1	23	52.2
28 May	B	2	18	61.1
23 June	B	3	16	50
9 Feb	A	4	27	51.9
26 Feb	A	4	17	58.8
10 Mar	A	4	24	45.8
17 June	A	4	28	64.3
10 March	A	5	18	72.2
23 Jun	A	1	23	69.6
28 May	C	2	30	40
SYDNEY				
16 Oct 2009	A	1	8	25.0
4 Feb 2011	A	1	26	61.5
Feb 2011	B	2	29	51.7
15 Mar	A	3	35	48.6
15 Mar	A	4	16	75.0
May	C	5	15	53.3

Fishmongers

Date	Store	Location	Number in Range	% Imported
CAIRNS				
16 Oct. 2009	1	1	9	0
4 Feb 2011	1	1	14	7.1
23/6/11	1	1	28	7.1
May 11	2	2	15	6.6
May 11	3	3	33	9.1
May 11	4	4	25	0
May 11	5	5	33	15.2
SYDNEY				
Oct. 2009	1	1	15	13.3
Feb 2011	1	1	25	36.0
4 Feb 11	2	2	57	26.3
	3	3	50	20
15 Mar 11	4	4	41	24.4

Table 9. Product range and percentage of imports **Supermarkets Brisbane**

Date	Store	Location	Number in Range	% Imported
6 Mar '11	B	1	17	70.6
6 Mar	B	2	18	38.9
6 Mar	B	3	15	73.3
6 Mar	A	2	9	88.9
6 Mar	A	3	13	69.2
7 March	C	4	6	100
7 March	A	5	17	64.7
7 March	B	5	14	71.4
8 Mar	A	6	19	47.3
9 Mar	B	7	11	91.7
9 Mar	A	7	28	46.4
9 Mar	A	8	25	64
9 Mar	B	8	14	64.3

Fishmongers Brisbane

Date	Store	Location	Number in Range	% Imported
7 March '11	1	4	22	4.5
7 March	2	4	11	36.4
7 March	3	9	24	4.2
6 March	4	10	50	14
6 March	5	3	12	41.7
8 March	6	11	52	15.4

The modified atmosphere packed (MAP) seafood sections in supermarkets also show a predominance of imported seafood in the range (often a mix of imported and Australian material within a pack with the principal component being imported). A total of eight observations in the major chains in Cairns and Sydney had an average of 60% imports (50 to 75%) in the MAP section.

Prawn products and salt and pepper squid dominated the imported lines while farmed Tasmanian salmon was the ubiquitous Australian product, even in the smallest store. Pre-prepared salt and pepper squid have been a great innovation in both retail and food service with total consumption of chilled and frozen products probably of the order of a couple of thousand tonnes.

The upright freezer sections of the supermarkets are predominantly stocked with imported manufactured packs: mostly ready to heat or cook coated products, some cook in the bag meals, prawn products and raw fillets. Seafood products manufactured in Australia from imported or imported and Australian raw materials are less common while manufactured seafood products with a total Australian content are unusual.

In short, the supermarket sector is heavily reliant on assured supplies of frozen imported seafood to enable it to operate its fresh/Deli, MAP and frozen seafood sections in a viable manner.

7.3 Food Service Trade Flow And Product Range

A wide variety of imported fish fillets and portions, crustaceans and molluscs in a raw, minimally transformed or substantially transformed state are used in the food service sector.

A large seafood wholesaler in the major eastern cities would regularly have a selection of about 10 fresh New Zealand products along with fresh Australian seafood and the occasional fresh imports from other nearby Asian-Pacific nations to offer. The major seafood fresh wholesalers in Brisbane, Sydney and Melbourne would invariably have a fresh seafood range of about 20 species.

It is common for a food service company to have about a hundred or more frozen seafood items covering the popular lines of fish, prawn, squid, scallops and miscellaneous shellfish in a number of size grades available for purchase at any time. Popular lines like hake, barramundi fillets and prawns would invariably be available in at least a dozen product/pack size options, as described in the following chapter on barramundi.

More than 60% of processed products on wholesalers' stocks — ready to cook crumbed, battered or seasoned fish, squid and prawn products and sushi-ready prawns — were produced overseas. A selection of highly transformed seafood from a single Japanese brand, Nichirei, is shown at the end of this section.

Overseas products together with Australian made products using imported raw material overwhelmingly dominate the food service sector particularly for the mid to lower price eateries and institutions.

Coated squid products (from Victoria) are the only category where fully Australian made products may have a significant market share. Whole green prawns is the only category where raw Australian seafood dominates the price list, particularly in the last few years since quarantine restrictions on imports of whole green prawns and the unusually heavy supplies and lower prices from Australian fisheries.

The percentage of Australian seafood in the total of the domestic plus overseas mix served by food service establishments is related to the market segment they operate in. Institutions and fast food outlets operating at the low price end of the out of home consumption have a very high proportion of imports, typically farmed, frozen and often ready to cook.

High price eateries such as specialty or formal dining restaurants have the opposite situation: fresh raw Australian wild catch and farmed fish and shellfish with frozen imports limited, mostly to New Zealand scampi or Canadian scallops.

The import to domestic mix picture is demonstrated below with Australian content increasing down this (eating) price ranked list.

Low budget Institutions such as jails and cheap catering
Fish and chips, take aways and fast food outlets
Cafes, pub counter lunches, low price catering
Bistros, hotel dining rooms, ordinary Asian restaurants and sushi bars and mid price catering
Casual/informal “contemporary foods” or seafood restaurants,
Formal contemp./seafood restaurants, Japanese sushi bars and restaurants, and formal catering
Top end fine dining restaurants.

It appeared that Australian fresh fish was priced in the thirty dollars and higher range for the dish consisting of a small portion of seafood (about 160-180 grams portion) and little accompanying food while seafood dishes under $20 were almost certainly a larger portion of imported frozen fillet with accompaniment of salad or chips.

The following list of fish fillets/portions, has been prepared as a simple parallel guide to the type/price of fish likely to be served in the different eating venues listed above, again with the highest prices (cost and selling price) at the bottom of the list.

Imported Basa
Imported blue grenadier/hoki
Imported Nile Perch and cheap Aust/regional fillets in season
Imported frozen barramundi fillet
Mid price Australian fillet fresh or frozen
Australian frozen wild barramundi fillet. Frozen imported coral trout
Fresh Tasmanian Atlantic salmon
Fresh Australian farmed barramundi fillet
Fresh Australian tuna or swordfish steak
Coral trout or farmed Murray cod (selling in $40 - 50 range)

There are of course regional differences in the Australian to import product mix offered by food distributors and eaten out of home just as there are with retail outlets, with capital cities’ range having a higher import percentage than those in Cairns.

Cairns wholesalers and distributors had a noticeably higher content of Australian wild prawns and wild barramundi in their stock compared to wholesalers in Sydney and Melbourne, but almost all have Tasmanian salmon too. Prawns and barramundi invariably featured on the menu of all but the

cheapest restaurants in Cairns, but neither farmed prawns nor barramundi were promoted in Cairns to food service or retail customers.

This situation is a reflection of the availability of locally produced wild prawns and barramundi and the long standing business connections and social links between wholesalers and fishers in this northern fishing port as well as the Queensland [wild] Catch promotion in 2008.

A striking feature of the Cairns dining scene is the New Zealand Pacific salmon on restaurant specials boards. Restaurateurs are offering this lower priced overseas fish as something different from the far more common barramundi or Tasmanian salmon.

Figure 6. Examples of some highly transformed seafood products from the Nichirei brand (A Japanese multinational company).

7.4 Manufacturing Trade Flow and Product Range

There are only a handful of sizeable manufacturers of substantially transformed seafood ("value added products") in Australia, mainly producing a wide range of crumbed or battered seafood and other foods, with imported fish or prawns accounting for far more of the seafood raw material than Australian product.

There are many more, smaller, companies each using low volumes up to a couple of hundred tonnes per species (per annum) of various imported raw materials to produce bread or batter coated items, fish cakes, prawn cakes, squid balls or specialty items such as prawn paste on cane sticks, taramasalata, filo wrapped products or other highly transformed seafood.

Squid processing in Victoria is a noteworthy exception where Australian raw materials are the primary source and imports provide a welcome contribution to factory throughput. Several factories in the Geelong area process Australian caught arrow squid into tubes, rings and tentacles (coated and raw) and utilise imported arrow squid from New Zealand when local material is in short supply. The annual volume of imports varies according to Australian supply and prices of New Zealand squid but imports total about 1000-1500 tonnes per year according to industry sources.

Australian seafood manufacturers are few, very competitive and private and commonly disinterested in divulging anything other than a general outline of their activities or products hence detailed information is unavailable. However some pertinent observation are available.

Coated products including fish fillets, fingers, portions and bites, prawns and squid are by far the largest manufactured category; other highly transformed product categories are less important.

The total fish finger category (Australian manufactures plus imports) accounted for approximately 3000 tonnes or more than 20% of the frozen value added seafood sales in the two major supermarket chains in calendar year 2010, according to Nielsen scan data; the majority of this is imported.

The per capita consumption of fried squid and fish fingers continues rising despite the unfavourable publicity about the consumption of fried foods and widespread reports about strong consumer interest in healthy eating.

Hake block and mince, traditional raw material from New Zealand for many coated fillets and fish fingers, have become very costly in the past few years and New Zealand frozen mince blocks (non specific) exported to Australia in 2009/10 amounted to only 164 tonnes (according to New Zealand Seafood Industry Council statistics), less than the thousand tonnes of a decade ago.

Other species including barramundi, basa, flathead, flounder, hoki, oreo dory, pollack, shark, tropical snapper and whiting have gained importance as raw materials. Specific tonnages are unavailable but it is assessed that the aggregate volume of all of the above fish is about 10,000 tonnes a year.

7.5 Utilisation Of Edible Imports As Bait

Californian *Loligo* squid has been imported for food and bait in the five pound (2.27kg) weight finger-pack finished block for more than 30 years but today more is utilised as bait than for human consumption.

Squid imports from the United States (predominantly Californian/west coast *Loligo*) amount to about three hundred tonnes per year according to ABS figures with about two thirds utilised as bait and the remainder used about equally between retail sale in fishmongers and food service. Preliminary figures for 2009/10 show 385 tonnes total imported American squid with a landed cost of $726,000.

There were no other edible seafood imports identified as being used for bait. The use of imported edible or “non-edible prawns” for bait was banned because of quarantine reasons in the early 2000s.

Fisheries products destined for bait or for feeding animals in aquaculture are imported as non-edible material under their own HTISC codes and classified by ABARES in the non-edibles category of imports.

In short, the volume of edible fisheries products imports that is utilised as bait is negligible; a relatively small volume is utilised in manufacturing but by far the greatest use is in the retail and the food service sectors.

7.6 General Trends And Outlook

This section gives an account of trends and outlook for seafood generally, specific comment on prawns, barramundi and basa is presented in the individual chapters on these species.

The increased domestic savings and frugality of consumers over the past couple of years has made the selling of seafood from all retail outlets and food service venues more challenging than usual. Restaurant dining has apparently been hit very hard according to all media reports.

Supermarkets now have an overwhelming influence on seafood trade and consumption in Australia with their weekly specials catalogues and sponsored TV programs like MasterChef, and linked commercials, that can rapidly boost sales for a featured seafood.

The supermarkets' large discount specials each week have certainly pushed prices down for the consumer but they are hurting independent fishmongers, who, despite selling a greater proportion of fresh Australian seafood than the supermarkets are declining in numbers. This increasing concentration of buying power in two large chains is something that Australian seafood producers are only beginning to notice.

Retail, food service and manufacturing businesses are all searching for new products and new ideas to increase profitability. Fresh farmed cobia is being trialled in Australia and imported tilapia fillets are now attracting more interest given they have entered the top ten best selling seafood in the USA. The supermarkets' commitment to sourcing sustainable seafood is also starting to change the trade flow, product mix and utilisation seen in Australia as new products/sources are adopted.

Modified Atmosphere packed seafood has been increasing its geographical spread in small and large supermarkets but a point of sale system for sealing fish, sauce or other accompaniments inside a leak-proof oven ready bag is being trialled for use in all types of retail outlets. This cook in the bag concept can extend seafood distribution beyond the usual channels and outlets.

Emerging digital technology will probably lead to new direct marketing channels opening up so that consumers can ***confidently*** shop for seafood without even leaving home.

The forever changing global seafood supply and demand situation will bring about changes in trade flow and product utilisation but the fundamental role of imports, particularly the highly transformed seafoods to trade and consumption in Australia will continue.

Given global population growth and increasing affluence, sourcing sufficient seafood from overseas to meet demand may become an even bigger challenge for Australia in the long term than it is today. Higher priced imports are inevitable.

8. PRAWN TRADE ANALYSIS

8.1 Import Volume, Landed Cost And Final Sales Value

Imported whole prawns and processed prawn products have long been major contributors to Australia's prawn supply, but the last few years have also seen high volumes of wild prawns from northern and eastern Australia enlarge total supply because of the unusually wet years. Preliminary ABS figures for 2009/10 show continued strong overseas supply and industry reports are of strong domestic production too.

The table below summarises the contribution of imports and Australian production to total supply for 2008/9, while the table further below has a breakdown of the imports according to the import category classification.

Table 10. Domestic and imported supply volumes (tonnes) and average beach price/import cost ($/kg) for 2008/9.

Product source	**Year 2008/9** tonnes (Av. $/kg)
Aust. wild catch*	15159 (11.64)
Aust. farmed	3985 (14.26)
Total Aust.	19144
Import excl. cans.	26269 (10.17)
TOTAL	45413

*Production minus export; Sources ABARES & ABS.

This indicates imports making up 58% of the aggregate product supply volume; the contribution to flesh consumption is detailed on the next page.

Table 11. Imported prawn category volumes and landed cost, 2008/9.

Prawn category code and description	Volume tonnes	Cost $/kg
1605200018 Prepared or preserved **in cans**	454.6	6.94
1605200019 Prepared or preserved, **not in cans**	13448.0	9.86
306130040 **Frozen** head on, tail on **cooked farm**	4542.4	8.84
306130041 **Frozen** uncooked farmed	4487.3	11.26
306130042 **Frozen** uncooked not farmed	3708.2	11.65
306230060 **Not frozen** head on cooked	4.5	11.41
306230061 **Not frozen** head on uncooked farmed	0	
306230062 **Not froz** head on, uncooked non farm	78.4	14.01
TOTAL	26723.4	

* Source : ABS statistics

Category...18 **in cans** and the three ***Not frozen*** categories shown above are not relevant or of such small volumes they are largely ignored for the following discussion of recent supply and market conditions for prawns in Australia.

The Australian volume figures tabled above were all product weight, but the imports are largely headless. The import component of the **edible flesh** of prawn eaten in Australia in 2008/9 was calculated at almost 72%, as indicated below, when assuming a 50% loss with head and shell off the whole product weight.

Table 12. Prawn edible flesh consumption volumes in 2008/9

Source of product	Volume prawn flesh (tonnes)
Australian	9572
Imported	24000
TOTAL	33572
	Imports as % of total = 71.5

8.1.1 Final Sales Value

The landed cost of all prawn categories in 2008/9 was $270.73 million, $3.2 million for canned and a total of $267.6 for all the other categories (from ABS statistics).

The multiplier from landed cost to final sales value for prawns was estimated at 2 for canned and 3.5 for the other products; the assumptions underlying the multiplier and final sales value estimations are discussed at length in Chapter 11. **The final sales value for the total of all imported prawns was calculated at approximately $943 million** ($6.3 million for canned and $936.5 million for the remainder).

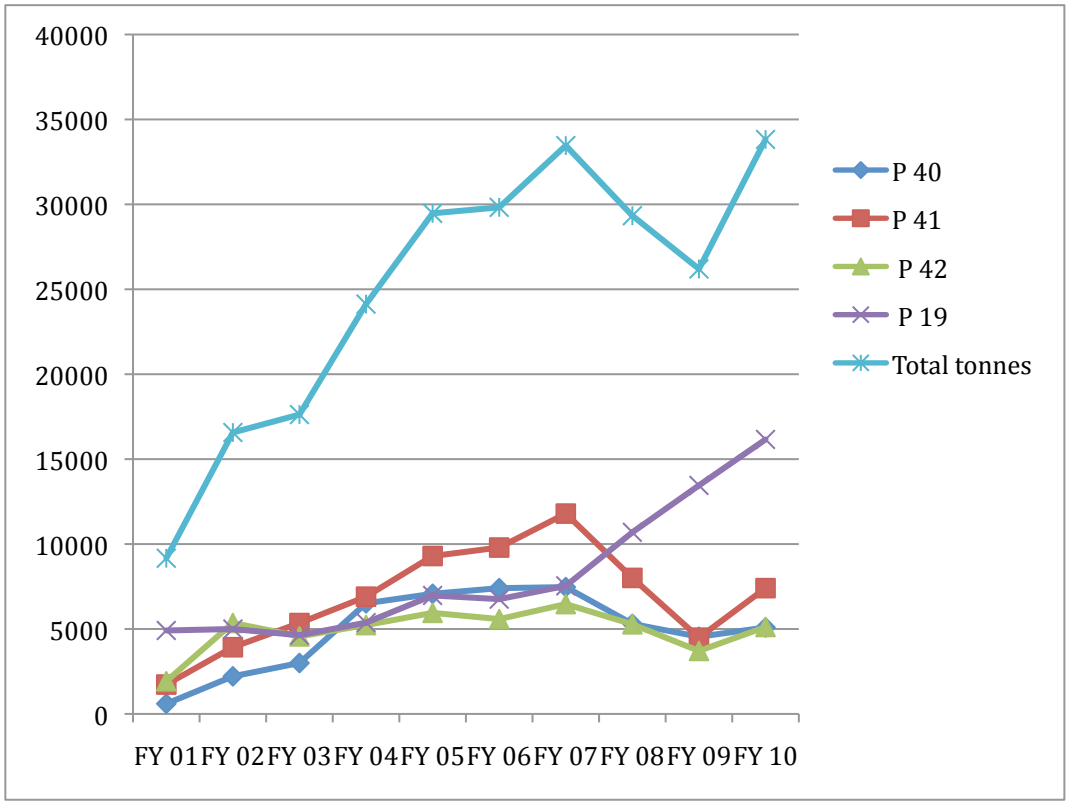
8.2 Import Trends

The figure below shows the annual fluctuations in supply over the past ten years. Aggregate volume of all frozen imports rose in the early 2000s, peaked in 2006/7 then fell in the 07/8 and 08/09 financial years as a result of a number of factors including:

- The global decline in business activity and consumer sentiment from early 2008 and all through 2009
- Declining demand for imported whole cooked prawns from the two major supermarket chains, especially from China
- Above average catches and supply of wild prawns in Australia in 2007/8 and 2008/9 (ABARES statistics)
- Increased volumes of Australian farmed prawns in 2007/8 and 08/09 (Lobegeiger and Wingfield 2010))
- The introduction of new quarantine restrictions on raw prawns in September 2007 that led to lower volumes in category …41 and …42.

Figure 7. Annual import volumes (tonnes) of the four key categories and the total tonnage*

P40 **Frozen** head on, tail on **cooked farm**
P41 **Frozen** uncooked farmed
P42 **Frozen** uncooked not farmed
P19 Prepared or preserved, **not in cans**



* ABS data; preliminary figures for 2009/10

Volumes rose strongly in 2009/10 (according to preliminary statistics) helped by an improvement in economic activity, a stronger Australian dollar and growing sales of marinated prawn products (as discussed below).

The quarantine restrictions introduced in September 2007 resulted in a marked drop in uncooked (whole) farmed prawns (HTISC..41) but this was offset by increasing volumes of highly processed (headless) prawns in 2007/8 and 2008/9 (…19) a category which can accommodate cooked as well as raw processed products. This category has become the most important one in terms of volumes and values in 2009/10 (Figure 7).

The landings of category …19 have apparently risen largely because of the increasing volumes of marinated headless prawns, for food service and retail use; these are seen in the Deli sections of the major supermarket outlets but this marked shift in product supply was not evident from the ABS statistics on this broad category classification.

Table13. Prices in 2009/10 and 2006/7 (post and pre-quarantine changes)*.

2009/10	**China** $/kg	**Malaysia** $/kg	**Thailand** $/kg	**Vietnam** $/kg
Code No... 40	6.43	8.41	7.09	11.36
41	8.83	7.84	9.37	11.36
42	9.15	10.04	9.89	9.70
19	7.32	7.72	8.28	9.50
2006/7				
Code No ...40	6.55	6.24	8.07	12.35
41	8.14	8.44	9.72	11.97
42	7.81	10.80	10.02	11.62
19	7.55	7.07	8.24	10.56

*ABS statistics

The average prices of the prawn imports are highly variable from one product classification to another for any particular country, from year to year and month to month, but they also vary considerably from one country to another for a particular product category. The table above shows the average prices for the four key categories from country to country in 2006/7 and 2009/10.

This price variability is a reflection of:

- The variety of species and products that are lumped in the various classification code numbers, especially in …19 and …41.
- The prices of different products according to processing costs and losses eg cooked products are dearer than raw; meat and cutlets are dearer than whole prawns
- Price variations with prawn size: larger sized prawns and tails command a higher price than smaller items
- Price differences resulting from the market supply and demand conditions for a particular species/product at contract date
- Currency exchange rate fluctuations with $A
- Inflation, typically higher prices over a lengthy period.

The only obvious points in the tabled price data are that:

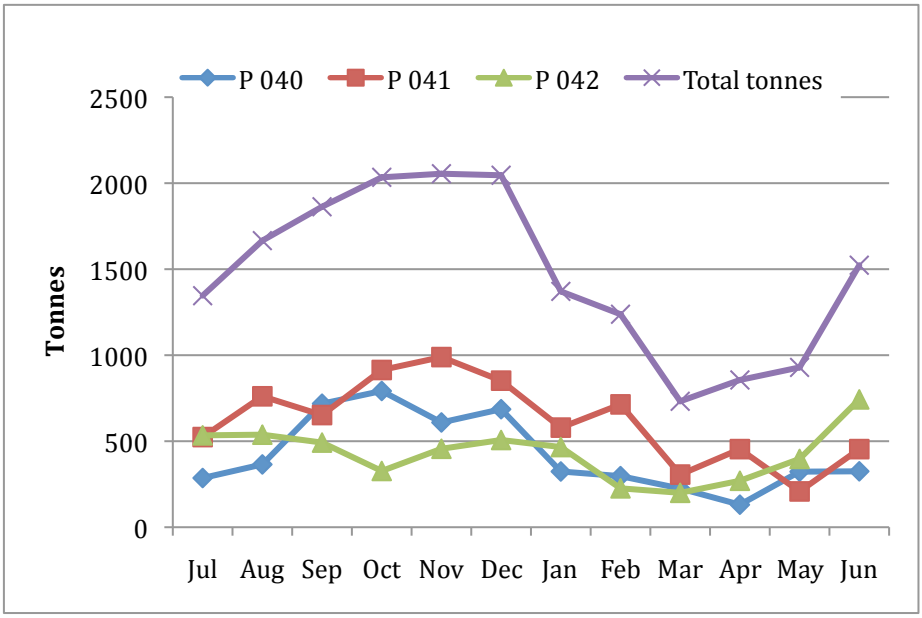
- China almost always has lower prices than most other sources, for a particular product group.
- Prices in 2009/10 were mostly less than in 2006/7, probably largely due to the stronger Australian dollar in 2009/10 vs 2006/7.

These data highlight the difficulty, noted earlier, about making any meaningful price comparisons in the absence of specific information and full details on the product in question, and a reference time.

8.2.1 Seasonal Trend

There is a clear seasonal trend in imports with volumes rising to a peak in November-December for the Christmas-New Year peak consumption period for the frozen categories 40, 41 and 42 and their total and this is particularly so for the whole cooked prawn category (P40) which are sought for inexpensive buffet functions and for home consumption.

Figure 8. Monthly import volumes 2009/10*



*ABS preliminary statistics

Import volumes decline in the early months of the calendar year after the holiday season and then pick up again about May, as fresh Australian farmed and wild prawn supply falls off. Import supplies are clearly geared up to fill demand in Australia's low supply of fresh and in the peak sales periods.

The frozen **not farmed** uncooked prawn category (…42) is the smallest of the frozen categories in volume and shows the least variation throughout the twelve months.

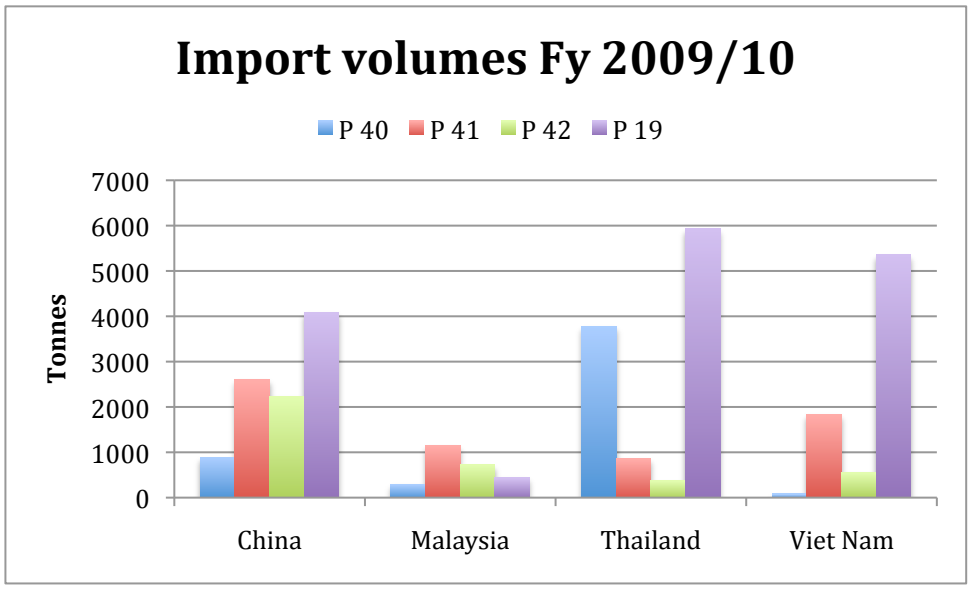
8.3 Major Sources

The national origin of imports has changed considerably over the years. India was the major supplier of processed prawns to Australia more than 20 years ago then Thailand became the source of almost all of the whole cooked farmed black tiger prawns in the early 1990's.

Vannamei prawns made their presence felt in Australia in the early 2000s and have become the dominant species as a whole cooked product and as processed prawns and currently represent more than three quarters of total imports according to industry sources. China and Vietnam are now two of the major suppliers of processed products, the former with vannamei predominating and the latter mostly with black tiger.

Figure 9 below shows the volumes shipped to Australia from the four major exporting countries in 2006/7 and 2009/10. These four countries together provided more than 90% of the total prawn imports to Australia in 2009/10, a year when prawns were sourced from 21 countries, according to preliminary ABS figures. The figure on the following page shows import volumes for 2006/7.

Figure 9. Prawn import volumes by country for 2009/10*.

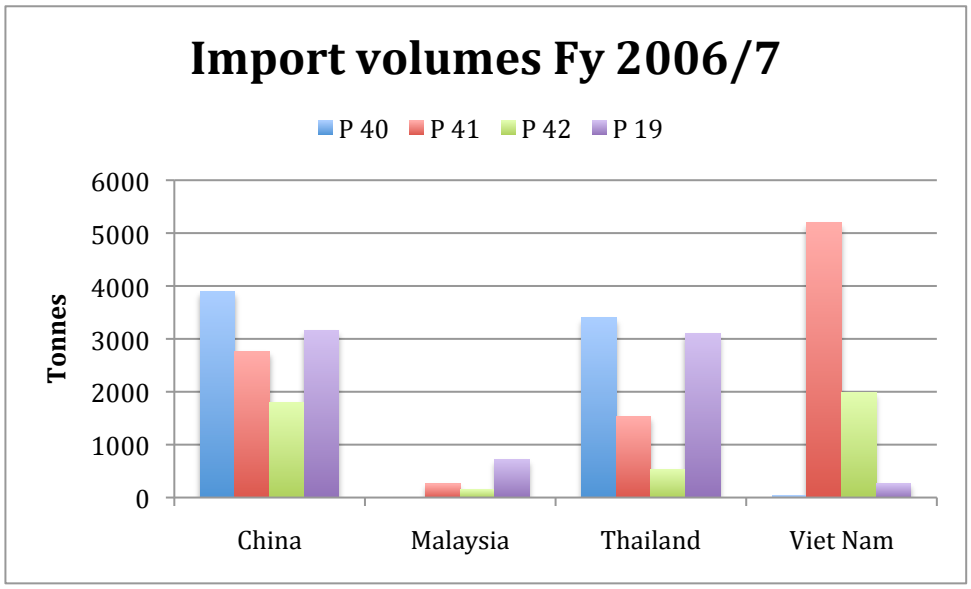


*From ABS preliminary statistics

Thailand was the most important supplier in 2009/10 and 2006/7 with its high volumes of whole cooked prawns (P40) and processed prawn products, (P41 and 42) predominantly vannamei.

China was a close second with aggregate volume but showing a decline in levels of whole cooked prawns and a rise in processed products from 2006/7. China's decline in whole cooked category was reported by industry as being due to decreasing demand from the supermarket sector for their prawns.

Figure 10. Prawn import volumes by country for 2006/7*.



*From ABS statistics

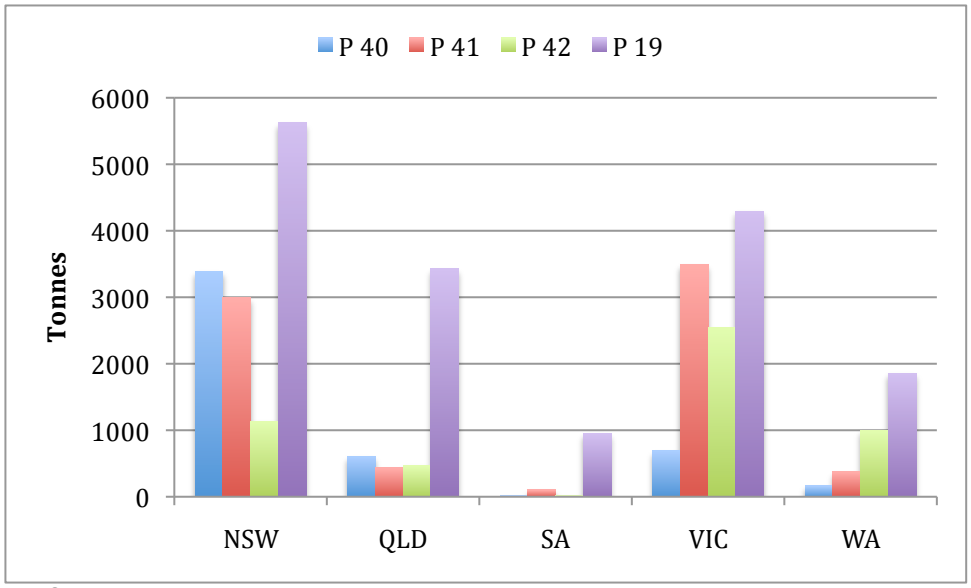
Vietnam has had a large decline in the farmed uncooked category (P41) since the quarantine changes (in 2007/8) but this has been offset by more than a tenfold increase in the highly processed category (P19).

Malaysia's exports to Australia also changed over this period following the quarantine changes. The volumes of the highly processed product category P19 fell but it has almost quadrupled its volume of raw farmed prawn products (P41) albeit from a very small level in 2006/7.

8.4 Australian Landing Ports

Prawn imports are mostly landed in NSW, with Victoria second and Queensland third in importance and WA and South Australia accounting for much less volume. The first point of landing is not a precise indicator of where the product is consumed because most of the major importers are national distributors and there is some interstate movement of imports, as there is interstate movement of Australian seafood; it does however provide an approximate regional guide to the relative consumption in each state.

Figure 11. Import volumes for each State 2009/10*



*From ABS preliminary statistics.

This figure highlights the strong demand for whole cooked farmed prawns (P40) in NSW, where they have established a strong foothold in the whole cooked market segment with supermarkets and fishmongers alike. This strong acceptance of aquaculture product (domestic and imports) in NSW *vis a vis* other states has been evident for more than a decade (Ruello & Associates 2002).

8.5 Utilization Of Imported Prawn Products

Whole cooked farmed prawns, (P 40), principally vannamei and some black tiger (BT), are predominantly sold in supermarket and independent fishmongers, in NSW in particular, with food service utilizing only around 30% of the volume, much of it in inexpensive buffet style eating. So for 2008/9: About 3180 tonnes versus 1360 tonnes for food service.

As seen earlier the imported vannamei and black tiger supply outweighed the Australian output of farmed BT and banana prawns. The imported BT are essentially the same as the frozen Australian ones; the imports once were cheaper than domestic ones but have caught up in price and some brands even surpassed them in calendar year 2010. The vannamei are typically a smaller and considerably cheaper prawn than the others.

Meats and tails, cooked and raw, have traditionally been consumed more heavily in food service because of their price competitiveness with domestic products but this changed markedly since 2007/8 with the increasing sales of the lower priced cooked vannamei meat and raw marinated headless prawns (code …19) in retail outlets. Recent utilisation of the frozen processed categories (code 41 and 42 and 19) are assessed at around 50:50 retail and food service. About 10,820 tonnes to each market sector in 2008/9.

Imported raw whole prawns had been used in food service and in retail outlets, before the quarantine restrictions, with the latter mostly utilised in geographical areas with a high population of Asian or European heritage where raw prawns are sought after for cooking various dishes. The totally raw and the marinated raw product sales have largely replaced whole raw imports.

The Northern Prawn Fishery, with its unusually large landings of (wild) banana prawns over the last few years have apparently been a major beneficiary of the disappearance of whole raw imports, as have farmed banana prawns and wild catch kings.

The coated prawn products, crumbed or battered, (also found in code ..19) are overwhelmingly sold in food service with retail sales only accounting for about 10% of the total volume of more than a thousand tonnes per year according to industry estimates.

The sushi-ready vacuum packed cooked and peeled tails (code …19) specially cut and shaped to go straight onto the rice ball have seen strong growth in the past few years as sushi bar operators choose convenience over traditional point of sale cooking and peeling. Precise volumes are not known but are assessed at about several hundred tonnes per annum.

Around five hundred tonnes per year is utilised by processors manufacturing various items in Australia, such as crumb or batter coated prawns or the (minced) prawns on a sugar cane stick.

Imported prawn use as bait is not allowed, because of quarantine prohibitions.

8.6 Trade Trends And Outlook

Prawn prices (in real terms) have never been cheaper in Australia and around the world and demand is bound to keep growing with increasing global population and growing affluence, in the BRIC nations (Brazil, Russia, India and China) in particular. China is a large consumer of prawns/shrimp and there are already signs that growing domestic demand is constraining its aggregate export volume.

The strong global demand for prawns will in turn drive further development in new products and of new markets; the prevailing trend to ready to cook or ready to eat products will certainly continue.

Prawn supply and prices however are more uncertain than likely demand because they are fundamentally determined by weather and biological factors, and the value of the Australian dollar, that are all largely uncontrollable.

Vietnam's supply has been reduced because of disease problems and Thailand's output has been severely affected by flooding earlier this year and prices have risen. Flooding is foreseeable to some extent but disease problems can be far more devastating in immediate and subsequent impact.

Australia's domestic supply from northern and eastern fisheries has been high in the past few years because of the heavy rainfall but a return to dry weather is inevitable and will lead to a decline in the proportion of Australian product and probably a price rise from prevailing low levels.

Australian aquaculture is likely to continue with productivity improvements but supply growth for the mid to long term is uncertain because there are no signs of large expansion in pond acreage. The major supermarket chains, the largest buyers of Australian whole farmed BT prawns and wild banana prawns will shape the future according to their product and source preference. But over the mid term prices are likely to rise slowly across most prawn lines.

The increased interest in Asian and other exotic cuisines will drive demand for more raw prawns and prawn products as will the renewed interest in home cooking emanating from the success of MasterChef and other cooking and TV food safari programs.

Australian consumers, especially in NSW and Queensland where prawns have long been enjoyed, prefer to buy fresh never frozen prawns. Fresh, raw prawns in particular, are not commonplace (much is frozen), for a number of reasons, but never frozen whole prawns are a product line that has been underserved, and now closed to imports, but remains an attractive opportunity for more Australian fishers and farmers.

Ultimately, the demand and prices for prawns, Australian and imported, will be determined by the marketing effort of the competing groups. Market share will be gained by the most creative companies and strategy not necessarily the cheapest offer. Australian consumers accustomed to low price specials are difficult to persuade to pay more for the same product later.

9. BARRAMUNDI MARKET ANALYSIS

9.1 Import Volume, Landed Cost And Final Sales Value

Barramundi does not have an international tariff code number and whole fish, fillets or highly processed retail-pack products have simply been recorded as “other fish”, “other fillets” or “other preparations” in the Australian Customs systems and ABS statistical databases.

Consequently there is a dearth of reliable historical information on the market entry and sales growth of the imported barramundi in Australia, other than the long history of barramundi imports from nearby countries particularly Papua New Guinea (which now contributes very little).

Field observations and trade interviews revealed that the range of imported barramundi products commonly available in Australia includes:

- Chilled and frozen head on fish
- Frozen headless ”butterflied” fish
- Chilled and frozen fillets (Skin on or skin off; shatter or individual wrap)
- Frozen portions
- Retail packs of frozen raw barramundi fillets in proprietary brands and supermarket home brands/private label.
- Imported barramundi crumbed and packed in Australia (retail and food service packs).

The top three product lines above come in a selection of size grades as shown in the following section.

The provenance of the products includes aquaculture in sea cages and fresh water as well as wild catch, with product coming from:

- Burma
- China
- India
- Indonesia
- Malaysia
- Papua New Guinea
- Taiwan
- Thailand
- Vietnam

Reliable individual statistics on the range of products noted above are few but some assessment on the two major raw categories fresh/chilled and frozen imported was possible.

Import volumes have apparently grown strongly in the past few years and aggregate volume of fillets and fish (fresh and frozen) was assessed at about 6000 tonnes for 2009/10, up on the 5500 tonnes assessment for the preceding year.

Barramundi product volume estimates for financial year 2008/9 were:

Fresh fillets, gilled & gutted or butterfly fish, both wild and farmed.
Total about 400 tonnes, 300 of this as fillet.

Frozen forms totalled about 5100 tonnes consisting of:

- 4800 tonnes of fillet, about 70% was farmed, from Taiwan
- 300 tonnes of gilled & gutted or butterfly fish, both wild and farmed, and other goods.

The imported product volume of 5500 tonnes (above) is greater than the total live weight of Australian barramundi fishing and aquaculture shown below.

The average landed cost of the imported chilled fillets in financial year 2008/9 was assessed at about $16.50/kg while that for the frozen fillet was about $7 per kg, ranging from $6.50 to 8.50 depending on provenance, with wild catch product costing at least a dollar more per kilo than the same size grade farmed produce.

Table 14. Australian barramundi production (tonnes) and average beach price/farm gate prices ($/kg)*

Year	2008/9	2007/8	2006/7
Wild catch	1736 @ 7.94	1621 @ 8.16	1468@ 7.95
Farmed fish	2964@ 10.67	3362@ 10.11	2632@ 9.09
Total volume	4700	4983	4100

* From ABARES Fisheries Statistics yearbooks

An assessment of barramundi consumption in terms of flesh weight (assuming a loss of 50% for head, and frame etc from the above Australian production and some of the imports) indicates that imports made up 68% of about 7400 tonnes of barramundi flesh consumed in 2008/9. This is less than half of the fresh/frozen salmon flesh consumed in Australia.

9.1.1 Final Sales Value

The landed cost of ***fresh and frozen barramundi fillets*** for 2008/9 was estimated at $38.5 million from the information above. With a multiplier estimate of 3.1 for fresh fillet and 4 for frozen fillet **the final sales value of *fillets* for 2008/9 was assessed at $150 million** (assumptions discussed in Chapter 11). There was insufficient reliable information on the minor products (headless or gilled and gutted fish etc) to evaluate their economic contribution.

9.2 Utilisation In Retail, Food Service And Manufacturing

The fresh category of products is predominantly sold to fresh seafood wholesalers who on sell them to retail fishmongers, hotel and club dining rooms and mid priced restaurants. A total of 400 tonnes in 2008/9, with about a fifty–fifty flow, or 200 tonnes each to retail and food service**.**

The frozen products, predominantly fillets, are retailed largely in supermarkets with a small minority going to fishmongers.

Assessments for frozen fillets in 2008/9 were about 2700 tonnes to retail and 1800 tonnes to food service. Eateries such as cafes and casual hotel dining rooms are the major food service users and fish and chips outlets are the minority cookers.

About three hundred tonnes of frozen fillets was assessed as utilised in manufacturing value added products in 2008/9. There was insufficient information on the minor products to discuss their utilisation other than that they are more common in outlets with a high number of Asian shoppers.

The diversity and more or less continuous supply and fairly steady prices of the range of imported barramundi products have all contributed to its market success in Australia not just the lower prices. The frozen fillets for example are regularly available in many size grades and several pack sizes as demonstrated below. The headless butterfly-cut fish are also available in several size grades.

Table 15. Typical barramundi fillet size range.

Production Source	Country of origin	Size grading	Pack size
Farmed	Taiwan	110/200g 200/300g 300/500g	5kg 5kg 5kg
Wild caught	Burma	115/170g 170/225g 200/300g 300/500g	10kg 10kg 10kg 10kg
Wild caught	Vietnam	100/200g 200/300g 300/500g	5kg 5kg 5kg

Many companies offer a similar selection of products but some have sizes ranging up to 500-800g fillets for wild caught.

The large size of the domestic wild barramundi fillet makes portion cutting a pre-requisite for food service and retail sale and constrains demand and prices, as do the typically large volume pack (sometimes random weight) and fluctuating price of frozen and fresh barramundi.

9.3 Trade Trends And Outlook

Australian wild supply has been fairly steady and predictable at about 1600-2000 tonnes per year but aquaculture production has greater uncertainty because of cyclone damage to facilities and production schedules in Northern Australia, as experienced with cyclone Yasi this year (2011).

This has been a blow to farmers wanting to keep barramundi fillets in the supermarkets, especially this year while the supermarket chains are promoting the Australian farmed produce along with the much cheaper Taiwanese fillets (the supermarkets' "value offering" in barramundi).

Australian farmers are building up their production levels and working to get more economies of scale to lower fillet prices and make them more competitive with other Australian fish such as Tasmanian salmon and wild barramundi as well as imported barramundi.

The barramundi demand from supermarkets is uncertain for both domestic and overseas product because it is highly dependent on the supermarkets' promotion effort levels given that Australian producers' and importers' investment in barramundi promotion has been small and irregular to date.

In the meantime imported fillets are likely to continue contributing the largest part of Australia's overall supply of barramundi products, particularly if the supermarkets' demand continues to grow and the A$ remains strong. The outlook for fresh imported fillets is uncertain at this time because the strongly growing demand from the USA and within Asia is raising prices noticeably and a much higher price may soon make them less attractive to some buyers here.

Interestingly, the strong market development and promotion of its American and Vietnamese farmed Australis barramundi in the USA by the Australis Aquaculture company (formerly an Australian company) has accelerated the market penetration of Asian farmed barramundi in the USA and boosted demand from the United States and elsewhere.

The supply of frozen farmed fillets from Taiwan and other nations is expected to grow sufficiently to meet expected demand but the supply of the better brands of both, wild and farmed, fillets is not growing so fast and Australian wholesalers are expecting modest price rises.

Cobia is looming as something of a cloud over the barramundi market internationally as its production volumes rise and it starts to penetrate the same market segment as barramundi in the USA. It is being heavily promoted in American seafood trade media and is being talked about as the new barramundi or large white fillet from Asia.

Farmed salmon however will continue to be the market leader in fresh Australian fillet for the foreseeable future given its track record of continual innovation and promotion.

10 BASA TRADE ANALYSIS

10.1 Import Volume, Landed Cost And Final Sales Value

Basa has no HTISC number and consequently there are no ABS statistics. There is however an indirect record of basa imports in the ABARES fisheries statistics yearbooks because basa dominates the Vietnamese frozen fillet category statistics that are available, and basa supply from other countries has apparently been negligible.

Moreover there is additional precise information on basa available from the Vietnamese Association of Seafood Exporters and Producers (VASEP) website as described below.

The Australian Fisheries statistics yearbook for 2009 (ABARES 2010) shows 14495 tonnes of frozen fillets came from Vietnam, at an average landed price of $4.45 per kilogram as shown below.

Table 16. Vietnamese fillet import volumes and value*

Year	Vietnam fish fillet Volume (tonnes)	Landed cost ($/kg)
2008/9	14495	4.45
2007/8	14283	3.77
2006/7	11307	4.45
1994/5	1492	5.64

- Extracted from ABARES Fisheries Statistics yearbooks.

All except about 1500 tonnes of this, ie about 13,000 tonnes is estimated to be basa; this estimate is consistent with the export data available from Vietnam and tabled on the next page.

This is a long way from the 1492 tonne total of frozen fillets to Australia in 1994/5 (tabled above). Vietnam's success in getting catfish fillets from almost zero to hero status by gaining acceptance in supermarkets and other outlets around the world in a just a decade is remarkable.

Basa and other commercial Vietnamese catfish species belong to the *Pangasius* genus and Pangasius is the common marketing name in Europe. Data from the Vietnamese Customs on the VASEP website on Pangasius exports for the past few years are tabled on the next page.

Table 17. Vietnamese exports of Pangasius (=basa) to Australia*

Calendar Year	Volume (tonnes)	Value US $ million	Average price US$ (A$ approx.)
2011 Jan-Mar	3353	10.34	3.08 (3.10)
2010	15148	43.02	2.84 (3.00)
2009 Jan-June	5141	14.91	
Jul-Dec	7668	21.76	
Entire year	**12809**	**36.67**	2.86 (3.60)

*From http://vasep.com.vn/vasep/eDailynews.nsf/Homepage

These volumes and prices for Pangasius can be used as a proxy for basa fillet volumes and average prices. Vietnamese basa fillets have been very cheap but low price is just one of the species' attributes that pleases, as outlined in the following section.

The traditional low prices are in fact rising. News releases on the VASEP website have repeatedly warned of supply shortages and price rises and this is evident in the jump in prices indicated for the first quarter of 2011 in the table above.

Basa fillets are typically packed in 5 or 10kg cartons, and available in three size grades:

- 120/170g;
- 170-220g;
- 220g+

with the medium size most popular.

In addition to the plain fillet there is:

- basa portions cut for food service and retail sale
- basa cutlets
- headed and tailed basa retail pack
- Basa skewers or kebabs with portions interspersed with pieces of capsicum, for retail and food service.

Plain(entire) fillets are by far the predominant product.

Basa is found in the major supermarkets as:

- Loose chilled (thawed) fillet
- Chilled raw fillet in MAP
- Chilled marinated fillet in MAP
- Frozen raw Individually Quick Frozen fillets in the freezer section
- Frozen raw Individually Quick Frozen portions of fillets

Innovation has been ongoing with basa in Vietnam, Australia and elsewhere and new products are regularly being trialled. As well as the standard basa fillet, premium basa fillets can be found in a supermarket house brand hard retail pack alongside crumbed fillets in a hard pack.

Basa pieces or portions have become a common component of the marinara seafood mix in fishmongers and supermarket outlets. The product on sale in supermarkets can represent anything from 20-33% of the combined weight of the loose marinara mix sold in the Deli section. The basa pieces used in the marinara mix in supermarkets and fishmongers may amount to more than a thousand tonnes per annum.

10.1.1 Final Sales Value

The landed cost of the 13000 tonnes of basa for 2008/9 was calculated at $57.8 million from the ABARES landed cost (above). With a multiplier from landed cost to final sales value estimated at 8.4 (assumptions and qualifications discussed in the next chapter), **the final sales value of Vietnamese basa was estimated at $490 million.**

This large return from its $58 million landed cost highlights the economic importance of basa to the post-harvest sector of the Australian seafood industry and to seafood related revenue in the low to mid price segment of the food service sector.

10.2 Utilisation In Retail, Food Service And Manufacturing

The food service sector, predominantly the cheap eateries, take-aways, institutions such as hospitals and jails, together with the fish and chips shops, are assessed as utilising about 60% of the estimated basa fillet volume; approximately 7800 tonnes for 2008/9. Basa has not only figured in cheap eateries and institutional meals, portions have been utilised for airline meals in Australia and elsewhere.

In Australia, basa has effectively built up its market share of low cost meals from hoki, hake, southern blue whiting and to a lesser extent Nile Perch, the common lower priced fillets.

Approximately 35%, 4500 tonnes in 2008/9, is being sold by retailers, largely the supermarket outlets and less by fishmongers, with the remaining few percent, about 600 tonnes, utilised in manufacturing various products as noted earlier.

The white/light colour of basa fillet is slow to discolour with time and this non-browning characteristic makes it popular with retailers with low turnover who may need have it on an ice display for more than a day. The low price appeals to everyone. These attributes have made basa one of the cornerstones of any supermarket Deli seafood section just like the attractive pink colour of vannamei prawns and low price have helped make it the other cornerstone.

10.3 Trade Trends and Outlook

The VASEP website news reports have been noting that farmers are experiencing difficulty gaining funds for restocking and that this has led to a slowdown in production and output of product. Fish supply in 2011 is expected to be more than 15% down on the previous year according to the VASEP Deputy Chairman in April this year when he predicted prices are expected to be about 10% higher in 2011 than 2010.

This prediction has already proven to be true judging from the early 2011 prices and buyers apparently are being asked to place their orders well in advance to ensure timely delivery.

The global supply of basa is however being augmented by increasing sales from other Asian countries and overall supply is expected to continue growing but perhaps not fast enough in the short term to match the increasing global demand as more and more people try it.

Consumer research in the Netherlands has found that young people are buying Pangasius because it is mild tasting according to Guus Pastoor, Director of Europe's Seafood Importers and Processors Alliance. "*We think Pangasius is opening new markets for new consumers who don't really eat fish*" Mr Pastoor said at a seminar at the European Seafood Expo symposium in May this year.

A Pangasius, shrimp and mushroom fish cake won the grand prize for best new retail product at the Seafood Prix d'Elite new products competition at the European Seafood Expo (ESE) in May this year. The EU currently takes about a third of Vietnam's exports of Pangasius according to VASEP statistics so this award will enhance its reputation and add upward pressure on prices.

Continued new product development is adding to basa's appeal. Recent news is that the Bianfishco has released two new collagen energy drinks (cherry and kiwi fruit flavour); these canned drinks are manufactured from filleting off-cuts from basa processing. The drinks are targeted at Japan and China "*where collagen drinks are very popular with women who believe that they smooth out wrinkles in their skin if consumed regularly*" according to SeafoodSource.com in July this year.

The collagen drink is still something untested in Australia but the mild taste and low price of fillets appeal to Australian consumers and basa is bound to continue its upward sales climb even with forecasted prices rises. This sales forecast is predicated on continued strong buying from Australian supermarkets given that it is still far cheaper than any other fillet available in the [large] quantities needed.

Basa's low price and large volumes are bound to produce increased sales demand from Australian fish and chips stores, take aways and budget dining too, despite a small price rise.

11. FINAL SALES VALUE

11.1 Price Mark-ups And Multiplier

The final sales value of imported seafood varies considerably according to species/product, the marketing channel, the consumer's dining location and other factors. Short marketing channels (as for supermarkets) typically have the lowest aggregate mark-ups because of the smaller number of transactions between the importer and the consumer. The highest overall mark-up is seen in a long chain between imports and consumption in a restaurant.

The lowest prices and mark-ups on landed prices noted in this study were with raw basa fillets sold in retail outlets inside the Sydney Fish Market at Pyrmont while the highest final sales prices were seen in restaurants in Sydney and Melbourne with soft shell crabs simply deep fried and garnished with cucumber slices—with final sale value approximately 2.5 and 12 times landed cost respectively.

Retail selling prices and price mark-ups typically are lowest in very competitive environments such as with supermarket chains and in retail market areas such as the Old Vic markets in Melbourne or at the Sydney Fish Market, then get higher in the independent fishmonger.

Prices and mark-ups in the food service sector are higher than in the retail sector but the food service sector is more complex and less transparent because they are far more dependent on the type of eating venue as well as reputation, and the selling prices typically take account of other food on the plate.

A nondescript café/fast food outlet sells a 160 gram piece of fried fish — imported frozen cheap variety such as basa — for as little as $4 while another charges 50% more; an "ordinary" restaurant may sell the same portion for about $20 with little more accompaniment than a small serve of fried chips or a simple salad.

The table on the next page has examples of the multiplier from landed cost to final sales values for raw fillet or fried fillet as well as for cooked whole prawns. The assessment of average mark-ups, sell price and multiplier are somewhat imprecise as they are based on limited observations, particularly on product flow to retail or food service (as discussed in the next section) *and* should be treated accordingly.

With dine in eateries: a restaurant serving fresh Australian farmed barramundi fillet would sell a 160-180 gram portion for around $34; a restaurant serving imported fresh fillet has a price around $27 while a café's price for frozen imported fillet would be around $20. The multipliers are 5, 4.7 and 7.3 respectively **if we ascribe half of the sell price to the seafood.**

The pricing on seafood is typically related to cost price not country of origin; seafood wholesalers and retailers add several or more dollars per kilogram on even the cheapest fish to cover fixed overhead costs, so this fixed cost plus a

profit margin amounts to a greater percentage on cheaper lines than it does on the higher priced lines, regardless of where they come from. Similar fixed costs and pricing practices apply in food service.

The relatively higher mark-ups that can be placed on imports enable wholesalers, retailers and restaurateurs to offset the smaller margins typically applied to domestic produce (because of its higher average cost price) to constrain selling prices and maintain affordability but remain viable. This heavier contribution to profitability from imports has become more critical in the past few years with tighter economic conditions and more frugal spending.

The outcome of this is that the average post-harvest "value added" to seafood as it moves along the marketing chain, after customs and inspections costs, transport, unpacking, any processing or cold storage and various sales transactions, is higher for imports than for Australian seafood.

In other words, the multiplier of the landed cost/first sale value to the final sale price is higher for most imported seafood than for the Australian equivalents, as seen in the table below. The notable exception is fresh New Zealand fish and fillets that have prices similar to the same domestically produced species/product.

Table 18. Landed cost/farm gate price, final sale price and multiplier estimate.

Product	Landed cost/ or farm gate price (Aust) $/kg	Average final sale price $/kg	Multiplier
Barramundi fillet raw Retail sale			
frozen import	8	17.50	2.2
fresh import	17	27	1.6
fresh Aust farmed	20	30	1.5
Barramundi fillet fresh fried (fish n chips)			
Frozen import	7.50	45	6
Fresh Aust farmed*	20	52	2.6
Basa fillet			
Raw	3	9	3
Fresh fried (fish n chips)	3	30	10
Prawns whole cooked Retail Sale			
Australian black tiger 20/30 size frozen/thawed	13.5	23	1.7
Vannamei small	7	14	2

The multiplier estimate of about 10 for a piece of fried basa (table above) from a fish and chips outlet demonstrates the importance of a cheap fillet for the economic viability of the fish and chips shop, take aways and low cost eateries.

11.2 Aggregate Final Value Estimates For 2008/9

As indicated earlier there is a high variability in the mark-ups on seafood (see also Box at the end of this section) and so *any* **assessment of final sales values based on average mark-ups and multiplier is somewhat imprecise**.

This task and imprecision becomes more challenging when assessing the final sales value of all seafood for a year, as shown in the following table where the values of seafood imports categories were aggregated; the assumptions on product flow to retail and food service and the multiplier and other notes for each seafood category are presented in Table 20, next page, where some of the product flow estimates are acknowledged as conjectural.

All landed costs are from ABARES (2010) except for prawns where ABS disaggregated figures were used to remove HTISC category …19 from ABARES "preserved or canned category" figures and place them in the "fresh, chilled or frozen category" where they are a better fit.

Table 19. Final sales value of 2008/9 imports.
Landed costs from ABARES (2010) & ABS statistics.

Product category	Landed Cost $'000	Multiplier	FINAL VALUE $'000
FISH			
Frozen fillets	238866	4.50	1074897
Other fish preparations	106578	3.50	303744
Fresh or chilled whole	55099	3.20	176316
Frozen whole	22316	6.50	145054
Other fresh chilled or frozen	13285	3.75	49818
*TOTAL ALL FISH	493446	4.20	2073848
CRUSTACEANS & MOLLUSCS			
Fresh chilled or frozen			
Prawns	267569	3.50	936491
Scallops	29889	4.00	119556
Mussels	12007	3.50	42024
Calamari, Squid & octopus	54286	4.80	260572
Canned & pres.Other molluscs	40878	5.00	204390
*TOTAL ALL CRUST & MOLLUSCS	461388	3.87	1782457
***TOTAL**	954834	4.04	3856305
Canned fish	331171	2	662342
Canned prawns	3157	2	6313
TOTAL with canned	1289162	3.5	4524960

*Includes value of minor categories not shown above

The final sales value of all imported fish, crustaceans and molluscs for financial year 2008/9 was estimated at $4.5 billion, 3.5 times the landed cost.

Table 20. Assumptions on product utilisation to food service and retail sector and qualifying notes underlying multiplier assessments.

Seafood category	Assumptions	Category Multiplier
Frozen fillet	50% Food Service & 50% Retail, multiplier 6 & 3 respectively	4.5
Other fish prep.	Conjectural, 50:50 mix, multiplier 4 & 3	3.5
Fresh chill whole	40% FS , 60% retail, multiplier 5 & 2	3.2
Frozen whole	70% FS, 30% retail, multiplier 8 & 3 Higher multiplier than fresh because of lower cost, extra handling, thawing etc	6.5.
Other fresh chill frozen	Conjectural, 50%:50%, multiplier 5 & 2.5	3.75
Canned fish & prawns	Assessed as retail sale	2
Prawns	P40 whole cooked farm 30% FS:70% retail; other products 50:50 flow. Multiplier 5 & 2	3.5
Scallops	50% FS, 50% retail, multiplier 6 & 2	4
Mussels	60 FS, 40% retail, multiplier 4 & 3	3.5
Calamari squid octo.	66% FS, 34% retail, multiplier 6 & 2.5	4.8
Canned, Preserved, other Crust & Mollusc	Conjectural, 50% : 50%, multiplier 6 & 3. This is almost all frozen and only a negligible volume of canned	5
Barramundi fillet	Fresh fillet 50:50 FS and retail, multiplier 4.7 and 1.6. Frozen fillet 40% FS: 60% retail, multiplier 7 and 2	3.1 Fresh 4 Frozen
Basa fillet	Flow 60% FS, 35% retail, 5 manufacturers. Multiplier 12, 3, and 3.5 respectively	8.4

Note: Any manufacturing volume was accounted for inside the food service or the retail sectors.

Excluding canned fish and canned prawns, the final sales value of imported fish, crustaceans and molluscs, for financial year 2008/9 was estimated at $3.9 billion, four times the landed cost of $955 million; the multiplier here is higher because fresh and frozen seafood have a higher multiplier than the canned category.

These multipliers of 4 and 3.5, above, for the totality of all categories, are higher than the 2.5 figure used by Queensland Fisheries (L. Williams, personal communication) but lower than the figure of five used by the Food and Agriculture Organisation (E. Colquhoun, personal communication) for estimating final sales value for seafood.

Pricing Variability And Heavy Discounting.

The retail outlets at the Sydney Fish Markets often have the cheapest prawns or barramundi fillets in Australia. Cooked vannamei prawns for $9.99 versus $17.99 in a suburban store in Sydney or Melbourne. Thawed frozen Australian wild barramundi fillets are typically around $35 per kilogram in Cairns but in the low 30s or less at Pyrmont despite the distance to market.

The table on the next page shows the prices, including specials, of imported and Australian seafood in Sydney and Cairns on the same day in February, for a fishmonger and a neighbouring supermarket Deli counter inside the same shopping centre.

An example of the variation in the final prices consumers are asked to pay for different forms/presentations of the same fish, such as basa, within a major Cairns supermarket in May follows.

Thawed fillet in Deli section	*$11.99 /kg*
Frozen fillets in home brand bag	*$11.85/kg*
MAP raw (thawed) fillet	*$16.99/kg*
MAP in lemon marinade	*$19.95/kg*

At the same time another supermarket chain was offering frozen portions at $9.32/kg in a 750g proprietary brand pack as well as the regular plain fillets in Deli.

The strong reliance on discount price promotions by the major supermarket groups particularly over the past few years also adds to the complexity in deriving average prices. Price discounts of 30 to 40% have become commonplace and half price specials are occasionally used to drive sales volumes up in the ongoing fight for market share. Basa fillets were an Easter special this year at one supermarket group for $4.99/kg, see below.

Price promotions are not unique to the supermarket retailer, fishmongers also use heavy discounts on one or two products as a price leader to lead customers into the store.

Table 21. Product and prices Cairns and Sydney; supermarket and independent fishmonger inside the same shopping centre. (4 February 2011).

Species/item	Sydney Prices $/kg		Cairns Prices $/kg	
	Supermkt	Independ't	Supermkt	Independ't
Basa fillet imported	11.99	8.00	11.99	
Barramundi fillet Imported	16.97 Taiw.		16.47 Thai	
Barramundi farm small G & G		18.95		
Barramundi fillet skinned, wild		39.95		38.90
Cod fillet smoked S AFrica	13.99			
Dory smooth, fillet NZ		21.95		
Hake fillet S. Africa	14.00			
Gemfish fillet		22.95		
Kingfish fillet		29.95		
Leatherjacket headless, skinned		7.95		
Ling fillet N Zealand	14.00**	32.95	21.99	
Lobster tropical tail		19.90 each		
Mackerel Spanish fillet				26.90
Mangrove jack fillet			29.99	
Marinara Aust & Imported mix	15.89	15.95		
Mussels (1kg pack)				
Octopus baby Malay.		16.95		
Oyster large Pacific		17.00 doz	12.98	16.70
Perch, Nile fillet Import	15.99		13.99	
Prawn banana, L raw	19.98	17.95	19.98	21.90
Prawn Endeavour cooked				14.99
Prawn king cooked L.		35.95 L		23.80 Med
Prawn king L raw		28.95		
Prawn tiger farmed cooked L	29.95		25.88**	
Prawn tiger farmed cooked M	26.00		25.99	
Prawn tiger wild cooked L				27.90
Prawn vannamei cooked Import	14.99 med.		8.88* Sm.	
Prwn cooked tails, ring 500g Imp	6.49			
Prawn crystal bay cooked Med.	23.00			
Prawn crystal bay raw small	17.99			
Prawn peeled tail on cooked Imp.	14**	25.00	19.99	
Prawn meat raw Malay/China	21.99			
Prawn meat chilli raw China	26.99			
Salmon farmed fillet			25.88*	32.50
Salmon farm portion no skin/bone	32.99	35.95		
Salmon farmed cutlet	26.99		27.99	
Salmon smoked (sliced fillet)	36.99		30.88	
Scallop meat Imported Scallop ½ shell Aust.	25.98	26.95 No roe		 13.80 /doz
Seafood highlighter Aust/Import	7.29			
Seafood salad mix Aust/Import	12.99			
Snapper small whole		21.95		
Snapper, red, fillet		39.95 pink		
Snapper crimson fish Snapper crimson fillet			10.95 28.95	 27.90
Squid tubes Imported		17.50		13.80
Sweetlip fillet			24.50	27.90
Swordfish portion		40.35		32.80
Trout rainbow gilled & gutted		18.95		
Trout rainbow smoked	28.99			
Tuna yellowfin fillet no skin/bone		37.95		37.90
Whitefish China		16.95		

**Weekly special

11.3 Employment Contribution

The most recent employment data for the seafood industry — commercial fishing, aquaculture, processing and wholesaling — are from the ABS census data of August 2006. The national employment figures (full time or part time work) for these four sectors, extracted from ABARES (2010), are shown below.

Aquaculture	3628
Fishing	6108
Fish Wholesaling	4202
Seafood processing	2001
TOTAL	**15939**

The number for fishing is considered an overestimate by the ABS because it includes persons engaged in trapping and hunting (not fishing). Nonetheless the post harvest components, 6203 persons in wholesaling and processing, represent 39% of this total.

At a conservative estimate, about 6000 people were employed full or part time in specialist seafood retail outlets, and about a thousand plus with supermarket seafood business and around six thousand working with seafood in food service premises, particularly seafood restaurants (say 6000 +1000 +6000). There were thus at least 13000 positions in retail and food service reliant on seafood. This number with the almost 16000 persons (3628+ 6108+4202+2001) working further back along the seafood chain in fishing, aquaculture, wholesaling and processing totals 29,000 positions in 2005/6.

The total of wholesaling and processing employment plus those in retailing and food service, of more than 19200 (13000+4202+2001) represented 66% of the entire employment in what may be called the broader seafood industry. Assuming that imports were about 70% of seafood consumed in Australia then there were at least 13440 post-harvest jobs (70% of 19200), excluding those engaged in general food distribution, that were essentially reliant on imports.

A conservative number, and given the ABS over-estimate of fishing employment, it appears that imports provided more jobs than Australian fishing and aquaculture combined in 2005/6.

All the employment numbers used above, acknowledged as conservative, are all smaller than those in a recent review (FRDC 2010b) which had the following projections, acknowledged as highly conjectural, for the year 2010.

Table 22. Employment projections for 2010*

Employment	Wild -catch	Aquaculture	All Post harvest Activities
Direct Indirect	20,000 30,000	10,000 20,000	
Total	50,000	30,000	20,000-30,000

*From FRDC (2010b)

The apparent differences between the FRDC projections for 2010 and the conservative numbers for 2005/6 derived in the present study are due to the lack of detail and precision in seafood industry statistics, the different reference year and the different definitions of post harvest activities (the FRDC projections included all “processing and putative transportation, storage, wholesaling, retailing and a component of restaurants” relating to the seafood industry).

There is a common conclusion however: that there are tens of thousands of persons working in the post harvest sector today: FRDC’s 20000+ number for calendar year 2010 and our calculation of 19,200 for 2005/6. Both estimates suggest about 20,000 or more people in 2011.

Also, there is ample evidence in this study to conclude that about 70% of this post harvest employment — more than 13440 (in 2005/6) and maybe as many as 14000-21000 jobs today (70% of FRDC’s projection of 20000-30000) — can be attributed to imports.

12. MARKET INTERACTION AND COMPETITION

Imported seafood is commonly perceived as competition to domestic production because it is frequently cheaper than the local equivalent item. However this perception is often far from reality and often arises because a species group such as prawns is being compared rather than a particular product within that broad category.

Direct competition exists where the imported and domestic products are nearly identical in most attributes such as species, size grade, raw/cooked state, fresh/frozen preservation, degree of processing or readiness to eat, but differ in price. Nevertheless there is often unjust resentment where the Australian and the imported goods, while in the same general category (say prawns), differ in quite a few features besides the price.

Asian imports, particularly from aquaculture, have generated most resentment and negative media coverage because of the perception that they posed a higher risk of food safety problems; while this perception was real in some situations in the past a comprehensive review by CSIRO (Moir 2009) shows it is not the reality now, as discussed in the following chapter.

It is necessary to compare “apples with apples” with an open mind to gain a true understanding of the complexity or the level of competition between domestic and imported goods. It then becomes clear that some imports pose little or no competition whatever and that markets are dynamic and the interaction between imports and domestic seafood is forever changing.

Other imports are complementary to Australian produce and present little or no competition, while some play an invaluable role in filling supply gaps that would otherwise adversely impact on Australian producers and marketers, as described in the following pages.

12.1 Basa And Barramundi

Australia has relied on imports to meet demand for all year round affordable fillets and fish for in home consumption and for cooking in fish and chips outlets and inexpensive eateries even in the most remote areas.

Hake fillets were traditionally one of the most common fillets in fish and chips outlets and cheap out of home eating venues, and they aroused the ire of South East Trawl fishers who were landing other white fleshed fish like gemfish. As the price of hake rose steadily blue grenadier/New Zealand hoki and Nile perch fillets helped fill the demand in the low price segment. Then basa arrived from Vietnam in the early 2000’s and changed the low price fillet market segment as increasing volumes of imported barramundi fillets did in the mid price segment.

12.1.1 Basa

Basa is a catfish species that has remarkably low production costs and relatively low processing costs and the low landed cost (around A$3 per kilogram in the past couple of years) has put it in a price segment of its own with no imported or Australian fillet close to it in price and year round supply.

With no foreign or domestic price competitor in the white, boneless, light flavoured fillet market it has taken market share off the other lower priced frozen imported fillets namely hake, hoki and Nile perch. Basa has not been a direct competitor to Australian fish or fillets because there is none in this low price segment, regardless of flesh colour.

It has raised fish consumption levels through its affordability in the supermarket, fishmonger, catering and lower priced out of home dining. Basa has provided the major supermarkets with a national “value offering” all year round that meets the needs of low income households particularly those that would regard other fish, imported or Australian, as unaffordable.

The importance of low price imports like basa and vannamei prawns to the well being of a large number of Australian households with very little disposable income (about 30% of households) was discussed in a FRDC Fact Sheet (FRDC 2010).

Basa also provides a variety of low priced frozen processed products (such as BBQ ready skewers) that pose no direct competition to anything manufactured in Australia, again because of their very low price.

Elias Savvides, the founder of Meridian Seafoods (a Sydney importer & distributor), suggested that “many fish and chips and take away businesses would not be viable today if not for the sales provided by good basa”.

12.1.2 Barramundi

The frozen gilled and gutted and the headless barramundi coming into Australia have found modest success, predominantly in the food service sector, because of the year round availability and low cost. There are no equivalent frozen Australian products because the low sales volumes of each individual product/size grade make these product lines economically unattractive to Australian producers at this time.

Frozen fillets, the largest volume product line from overseas, are at least several dollars per kilo cheaper than the Australian wild product, and have recorded increasing sales in retail and food service. There is no supply of frozen Australian farmed fillet but the imported fillets, from wild and farmed fish, come in many size grades typically much smaller than the larger “run of catch” (ungraded) wild Australian fillet.

The smaller sizes of the imported fillet make them more attractive and manageable for supermarket display and sale and the plate size fillets are ideal for food service use too.

The imported frozen packs are visually and functionally totally different to the typical large Australian packs and best regarded as indirect competition. As noted earlier, the large size of the domestic wild barramundi fillet, the large volume cartons and fluctuating prices have been long standing market impediments (Ruello & Associates 2008) that have not yet been addressed by most dealers.

The competitive situation with fresh fillets from overseas is somewhat clearer because they are essentially identical to domestic farmed product but come in various size grades some overlapping the fillet available from Australian farmed fish. There is direct price competition in this product line but the imports have gained market share because of the convenience and utility of having many size grades available to meet different demands, not just a lower price.

The availability of imported fresh fillets constrains demand and prices for the fresh farmed Australian fillet but the strength of this impact is difficult to assess because the imported product predominantly flows into fishmongers and food service businesses for immediate sale, while the Australian farmed fish is cut to order for the supermarket outlets and for the restaurant trade.

The fresh imported fillet product line was assessed at around 300 tonnes in 2008/9 and any “lost” demand for Australian barramundi would likely be of the order of a couple of hundred tonnes of whole fish because only some buyers would switch to the costlier Australian fillet if the imports were not there.

Australian fishers’ and farmers’ attention on imported barramundi has focussed on its lower prices and its perceived inferior quality and few have considered how the strongly growing market share of fresh Tasmanian farmed Atlantic salmon has constrained barramundi demand and prices. Other Australian fish such as blue eye and flathead fillets also pose price competition to barramundi.

The volume of fresh salmon fillets and portions consumed in Australia exceeds the volume of **all** imported and Australian barramundi products combined. Salmon fillet is marginally dearer than fresh farmed barramundi fillet but nevertheless presents powerful indirect competition, far stronger than that from imported barramundi.

The salmon industry’s strong focus on quality management, new product development and market promotion, and its public disregard of “import competition”, has led to its pre-eminent position in seafood marketing in Australia.

12.2 New Zealand Fish

New Zealand fresh fish and fillets have long provided the strongest direct price competition for Australian fish. The same species/product — flown into Australia, once noticeably cheaper than the Australian catch but now about the same price.

Frozen New Zealand products have also offered strong direct price competition to frozen Australian seafood here in Australia and overseas.

New Zealand fish has not aroused much resentment from Australian producers in recent years because New Zealand is seen as operating under similar cost structures and regulation to Australia. Also fishers have come to recognise that this New Zealand product helps fill the gap when Australian supplies are low because of unfavourable weather or other factors and thereby maintains supply and prices at levels suitable for producers, marketers and consumers.

In recent years the nature of the competition has changed as prices of New Zealand fresh fish have sometimes surpassed that of the neighbouring Australian fish on the Sydney Fish Market auction because of their high quality and reliably good fine size grading.

These higher prices can become a two edged sword for the seafood industry however because the increasingly high retail prices on these products, such as blue eye, ling and John dory meet consumer resistance which then constrains demand and prices for these products as some consumers move to more affordable alternatives.

12.3 Prawns

Fresh Australian farmed prawns became common in Sydney in the 1990s and by the turn of the century the Australian cooked fresh farmed black tiger (BT) prawns were outselling the wild catch medium cooked king prawns which had till then been considered the premium local prawn product (Ruello & Associates 2002).

As Australian frozen farmed prawn volumes increased, in parallel with import volumes growth, the disquiet about imported prawns amongst Australian fishers and farmers also increased.

The imported frozen cooked BT prawns were essentially identical to the equivalent Australian product but more than 10% cheaper and quickly gained market share, particularly in the supermarket sector, and constrained price increases for the domestic produce.

Each December new season fresh Australian cooked BT prawns compete directly for the consumer dollar with frozen Australian and overseas BT prawns when they are thawed for display in retail outlets; the Australian prawns had mostly been frozen for around 6 months (or more) but the imports are only a couple of months post-harvest having been produced and packed to order.

The imports are differentiated from the Australian product by their Country Of Origin Labelling (COOL) but the thawed frozen product is commonly not identified as such (Box next page) and consumers are often confused by the variable taste quality of these different BT prawns being sold (fresh/never frozen, newly frozen, long frozen etc).

Peeled farmed BT products were also cheaper and they too gained market share on similar Australian items as well as foreign wild catch processed products, and reduced the demand for Australian produce.

The situation changed more recently with quality improvements and rising prices of BT prawns and some brands commanding higher prices than domestic frozen prawns. Steve Costi the owner of several leading seafood retail stores in Sydney says the quality of the cooked imported BT prawns is “truly amazing” and that he is prepared to pay up to $2 per kilo more than for the Australian equivalent because of the superior colour and size grading.

The market penetration of cooked whole vannamei prawns from about 2003, seemingly added to the price competition in the frozen prawn category but this too is a complex story. Early imports of vannamei prawns into Sydney were of very small size grades, very cheap and sold readily in an era of drought years when small prawns such as school prawns were effectively absent from the marketplace.

For supermarkets, there was no small Australian prawn that could offer the same assured quantity and quality at steady prices; they provided tasty prawns for consumers who might otherwise not be able to afford prawns at all.

Vannamei prawns were nonetheless perceived by some farmers and fishers as added direct competition from imported prawns when vannamei had in effect opened up a new low price market segment for prawns that met consumer and supermarket needs.

In calendar year 2009 and 2010 however when local fresh small prawn market supply was boosted by heavy rainfall the whole vannamei prawns did provide some indirect competition and probably constrained prices of cooked small Australian east coast wild prawns.

COOL Country Of Origin Labelling

Country of Origin Labelling is regarded by some producers as a powerful tool to raise demand and prices for Australian seafood. Yet while COOL differentiates imported foods from domestic production and enables more informed choice there is no evidence that COOL alone leads to any lasting improvements for producers or marketers.

*A recently completed R & D project tracking the impacts on seafood dining venues arising from the Northern Territory's State government [country of origin] seafood labelling laws, over the past two years following their introduction in November 2008, reported " **a high level of consumer support**" for COOL labelling laws. Survey results indicated a fall in the range of imports offered by some wholesalers but they also showed that "**the source of seafood has not changed dramatically**" (Calogeras et al. 2011).*

The Queensland Catch promotion project in Cairns in 2008 heightened awareness of Queensland seafood and increased interest in Australian seafood for a short time. This well funded program undoubtedly raised the public profile of the state's seafood industry but it did not noticeably increase prices for Australian fishers; imported seafood sales rebounded and have continued to grow more strongly.

COOL focussed programs may generate a short term fall in demand for imported seafood, particularly in small regional cities with a prominent fishing industry, but they have not pushed up national demand and prices for Australian seafood in a significant lasting manner.

The seafood industry has focussed on country of origin labelling and ignored other labelling matters affecting consumers. Consumer trust and the need for truth in labelling have repeatedly been identified as critical factors in increasing seafood consumption and the use of the label "fresh" on thawed out seafood –Australian and imported — is a concern to consumers (FRDC 2006) and deserves more attention if consumers are to fully make more informed choices.

Processed vannamei products have provided strong price competition in some headless product lines since their introduction to Australia. The implementation of tighter quarantine restrictions on raw prawns in 2007 led to a substantial and unnoticed shift in imported prawn supply from the whole to headless raw prawns and the rapid development of a reformulated product line: marinated prawn flesh and cutlets.

This reformulated product line quickly recorded strong sales growth because it offers the “Holy Trinity” of convenience, quality and value, attributes that were promoted as the key to successful marketing of Australian seafood nearly a decade ago (Ruello & Associates 2005).

Competition from overseas prawns has only been part of the problem for the Australian prawn industry, and this has diminished for whole cooked and raw prawns because the proportion of whole prawns has declined in favour of many more peeled products.

The ban on imported whole raw prawns closed off this market segment for imports and helped some Australian producers increase sales **volumes** but fishers and farmers alike are still struggling to get higher **prices** for their prawns, particularly with a strong Australian dollar relative to the US$.

The noteworthy point is that the continuing downward pressure on prawn prices is the result of this complex interaction between the steady volume growth from Australian and overseas aquaculture, increased supply from Australian wild catch fisheries and strong A$ in the past few years coupled with a paucity of innovation and concerted action to stimulate demand.

Occasional brand price promotions do little more than change market share, they do not generate price rises and the immediate boost in sales volume fades away once the regular price returns.

Australian prawns and prawn products, indeed prawns from all sources, have never been cheaper but the consuming public largely remains unaware of this, other than the canny shoppers who take advantage of the incredible price promotions by the two major supermarket chains.

12.4 Competitors Or Complements ?

Some of the New Zealand arrow squid imports complement the Australian raw material for the squid processing factories in Victoria, while some raw and substantially transformed imports also provide direct price competition with the equivalent domestic manufactured products. The Victorian squid industry would like to have no competition whatever but recognises that overall, imports are a positive, playing a complementary role in squid trade and national consumption .

The Australian scallop industry has a situation similar to the Victorian squid industry in that it recognises the role that imports have in maintaining a viable market for scallops. Australia has been both an exporter and importer of scallops for many years and the overseas products help underpin the national supply for retail and food service sectors because the Australian production of the warm water saucer scallops and the commercial scallops from southern Australia is erratic from year to year and frequently inadequate.

A definitive answer to the headline question above, for squid or scallops, would require comprehensive economic and market analysis that is beyond the scope of the present study. However it seems that scallops and squid are complements rather than competition for Australian produce.

For imports such as Chilean giant crab legs, Asian whitebait (noodle fish), and many processed seafood such as barbequed Asian eel fillets (for sushi) that are not native to Australia and not produced here the obvious answer is that they are complementary. These are imported in small volumes, few hundreds of tonnes or less, but add variety to in-home and out-of-home eating without any noticeable negative impacts on Australian fisheries trade.

These exotic species/products add to the diversity of seafood available to Australian consumers and strengthen its appeal *vis a vis* other protein foods such as poultry and red meat.

12.5 General Observations And Discussion

"Cheap imports" have been a part of Australia's seafood trade for years and fishers faced costs-price squeezes well before the influx of Australian and overseas aquaculture produce. Today Australian producers are increasingly seeing fresh and frozen imports that fetch higher prices than local produce.

Overall, imports provide less competition than widely perceived while their critical role in maintaining Australia's supply of nutritious food, keeping seafood affordable and indeed on the menu in the mid to low price eateries is not widely recognised. The obvious expansion of the supermarkets' seafood trade has only come about because of the continuity of supply from affordable frozen imports (and domestic aquaculture produce), and the supermarket chains are now an increasingly powerful buying and selling force.

Imports have become increasingly important as sources of highly transformed seafood [frozen] items such as prawn parcels/won tons, not just raw fillet or prawns. These frozen value added products are the results of overseas product development and innovation, coupled with cheap raw materials and labour and the economies of scale possible in populous countries with large overseas markets (such as the Nichirei line shown earlier).

Imports are an integral part of global trade and food security and cannot be fully or partly prohibited to protect local producers or other businesses. Seafood is not a staple part of the Australian diet, this country has long enjoyed cheaper meat and poultry and seafood retailers and food service businesses have to compete with other foods for the consumer's attention.

Figure 12. Front page item of the Cairns Post, 12 September 2007.

LOCAL $5/kg

IMPORTED 50c/kg

Cairns Post 12/09/07

1000 tonnes sit at wharf

THE flood of cheap Asian seafood into Queensland has left about 1000 tonnes of local prawns stockpiled in Cairns coldrooms.

The effect on overseas sales from the high value of the Australian dollar is also being blamed, with Far Northern trawler operators refusing to sell their catches locally for the low prices on offer.

One Cairns cold storage facility has 600 tonnes stored including prawns, cuttlefish and bugs.

Ross Irby
irbyr@fcp.newsltd.com.au

Far Northern fishermen are being offered $5 a kilogram for prawns and instead are stockpiling them unsold, Queensland Seafood Industry Association president Neil Green said.

At the same time, supermarkets buy "inferior" Asian prawns for 50c a kilogram and sell them for between $12 and $14 a kilogram, he said.

He called for the shops to take a cut in their profits and buy the Queensland seafood and for wholesalers to accept smaller price mark-ups.

Mr Green said people must help by demanding local seafood at shops and restaurants and "shame" the supermarkets into buying the fresh Queensland product.

The QSIA had a $400,000 Federal Government grant to promote fresh local seafood because of the stranglehold imported seafood had.

"The campaign was based in Cairns but would benefit the entire Queensland coast," Mr Green said.

Continued Page 2

Indeed seafood retailers compete for a share of the discretionary spending dollar against foods ***and*** most consumer goods such as must-have electronics or fashion items. Hence negative publicity about imports particularly exaggerated stories about "inferior Asian product", as in the Cairns Post item above, can be counterproductive in that they raise consumers' concerns about all seafood, and that can depress demand for some time.

In discussing the prawn trade during an interview, Mr Theo Kailis, a Director of Austral Fishing, a company engaged in prawn fishing and seafood importing, suggested that " An attack on a prawn is an attack on all prawns."

13. IMPORTED SEAFOOD SAFETY AND SUSTAINABILITY

13.1 Australia's Food Safety Management Systems

The following account has largely been adapted from Moir's (2009) review of the Australian Quarantine and Inspection Service's testing protocols on imported seafood.

Food imported into Australia must meet a comprehensive set of quarantine and foods safety requirements in which pre- and at-border controls are administered by the AQIS and post-border controls are managed by State food safety agencies.

All food, imported and domestic, must meet Australian standards that the food is safe and fit for human consumption; these standards prescribed in the Australian New Zealand Food Standards Code are based on technical advice from Food Standards Australia New Zealand (FSANZ).

AQIS requires that quarantine requirements are met before food safety is checked. An import permit must be obtained before food is allowed to enter Australia, other mandatory documentation and any testing certificates must all be presented before foods are released by Australian Customs.

In addition the larger importers regularly visit overseas packing and processing plants and arrange for independent inspection and testing in-country or in Australia; their supermarket customers inspect the plants too.

AQIS manages a risk-based Imported Food Inspection Scheme (IFIS), with FSANZ advising on the seafood/hazard risk categorisation, which determines the inspection rate for different categories of seafood. AQIS currently has two classifications for imported seafood with designated inspection rates as follows.

Risk foods, those that pose a medium to high risk to public health: At point of entry the Australian Customs service refers 100% of these foods to AQIS for inspection against the hazards determined by FSANZ. Risk categorised seafood includes finfish, crustaceans, molluscs and other invertebrates. The inspection rate reduces with good compliance.

Random surveillance foods (others). These are subject to referral to AQIS and are inspected at a rate of 5% of consignments and are inspected against specific standards.
Holding orders: If a random surveillance food fails, 100% of comparable suspect consignments are referred to AQIS and tested until satisfactory compliance has been demonstrated through five consecutive 'passes'.

Product from countries with which formal agreements and/or Memoranda of Understanding are in place are given less attention for food safety inspection and analysis than product from countries that have no certification or compliance arrangements in place.

Shipments of food imported with certification that is accepted by AQIS are inspected at the rate of 5%. Any failures may result in increased rate of inspection. Systematic non-compliance may lead to cancellation of the arrangement.

A technical review of the current testing protocols for imported seafood was recently undertaken for AQIS, and released, by CSIRO (Moir 2009). This report described the advantages and limitations of current Australian practices and recommended that greater use of foreign government certification and compliance agreements would make the already effective protocols even more so.

The following summary of the results of testing carried out under the IFIS in calendar year 2008 has been extracted from Moir's 2009 report.

Table 23. AQIS Import testing results for calendar year 2008*.

Exporting Country	No of tests	Compliance Rate (%)
Thailand	804	99.0
New Zealand	378	98.9
China	859	98.0
Vietnam	1040	97.5

*From Moir (2009)

This table shows:

- a remarkably high compliance rate on imports from all four sources
- Asian imports' compliance rates are no different to New Zealand's.

The report has quite an extensive amount of information on the testing undertaken and the detailed results for each country.

13.2 Biosecurity Australia.

Biosecurity Australia (BA) is a unit within the Department of Agriculture, Fisheries and Forestry, that undertakes science-based risk assessments and provides quarantine policy advice to AQIS and other agencies to protect Australia's animal and plant health status and natural environment, according to its website www.daff.gov.au/ba. Biosecurity Australia also works with international agencies that set standards for animal and plant health.

BA has responsibility for developing and reviewing quarantine policies: The process to develop a new quarantine policy, where no policy exists, is called an import risk analysis (IRA) and is undertaken by BA scientists and technical specialists.

As a World Trade Organization member, Australia is obliged under the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) to consider all import requests from other countries concerning agricultural products, just as other member countries are obliged to consider Australia's requests. Decisions to permit or reject an import application can be made by BA only on sound scientific grounds.

BA's import risk analysis on prawns and the subsequent introduction of new controls on the importation of raw prawn products in September 2007 brought about the sudden drop off of the whole raw categories and increased businesses' administrative and testing costs for processed raw products.

The latest detailed information on the conditions under which many foods, animals and plants can be imported is available on AQIS' Import Conditions Database. The current import conditions for raw prawn products are available at http://www.aqis.gov.au/icon32/asp/ex_querycontent.asp

Up to date information on biosecurity regarding seafood exports from the major exporting countries was very sparse and typically too specialised for a meaningful overview here.

13.3 Overseas Government And Industry Activities Regarding Food Safety and Sustainability

The following accounts on some of the ongoing activities of the major exporting countries in regard to the safety, quality and sustainability of their seafood are based on a desk top review of the latest information available and are not a technical evaluation of the efficacy of the programs, resources or activities outlined. CSIRO's technical review (Moir 2009) noted earlier provides some guidance on this.

13.3.1 Thailand

The Thai Department of Fisheries (DOF) in the Ministry of Agriculture and Cooperatives is the AQIS nominated Competent Authority authorized to issue Health Certificates. Australia has a foreign government Certification Arrangement regarding food safety matters with the DOF whereby certain goods accompanied by the appropriate documentation will generally be released without inspection. However in practice most importers arrange for product testing/inspection in Australia.

The following summary on Thailand's "Farm to Table" approach to food safety and quality management has been prepared from a recent workshop presentation by J. Yamprayoon and K. Sukhumparnich (2010) of the DOF.

- All shrimp processors producing for export are required to buy raw materials only from farms following the Thai DOF guidelines for Good Aquaculture Practice (GAP) or Code of Conduct (CoC) for Responsible shrimp farming.
- Good Manufacturing Practices and Hazard Analysis Critical Control Point programs are mandatory for export registered processing plants.
- In addition to plant inspections the DOF also monitors finished product from the processors to verify their food safety management system.
- The National Residue Control Program has been established to control prohibited chemicals and veterinary drug residues in aquaculture.
- A Movement Document protocol was instituted in 2002 which requires a Document to accompany the shrimp or fish from farm to processing factory which enables traceability of the shrimp or fish from hatchery to farm to factory.
- "DOF has attempted to incorporate the concept of social responsibilities and sustainability into the present GAP principles."

The Thai Frozen Foods Association is active in promoting better work practices and continuous improvements in food safety and quality management. An extract from its web site, on guidelines for seafood exports, is attached as Appendix 4.

The Thai Fisheries Department's (English language) website is a rather outdated one with a short reference to its target to maintain wild catch

landings and increase the production from aquaculture. It has however been very active in the field and its staff has assisted companies to gain sustainability certification from the various international entities including Global GAP, Friends of the Sea and ASC (Aquaculture Stewardship Council).

Many overseas buyers have also been working with Thai suppliers to build a stronger sustainability effort: Phillips Foods a long established American seafood company, has opened a new Division of Aquaculture and Sustainability to make sure their purchasing decisions in Thailand and elsewhere round the world take account of long term environmental issues.

13.3.2 Vietnam

The Ministry of Agriculture and Rural Development (MARD) - National Agriculture, Forestry and Fisheries Quality Assurance Department (NAFIQAD) is the AQIS nominated Competent Authority.

Vietnam has been working hard to overcome the condemnation of Pangasius products because of chemical residues in the early and mid 2000's and continuing questions about their quality, safety or the environmental credentials of its aquaculture.

The National Agro-Forestry Fisheries Quality Assurance Department responded with various initiatives over the decade including a new "Residues Monitoring Program for Certain Harmful Substances in Aquaculture Fish and Products" this year. Industry has been very active too led by the Vietnamese Association of Seafood Exporters and Producers (VASEP), it has pursued international certification on food safety and good aquaculture practices over the past few years to build consumer confidence and strengthen overseas trade.

According to SeafoodSource.com on 13 April this year, 379 processing firms were certified for exports to the European Union. Another news item dated 24 June noted that 45 Vietnamese farms had gained GlobalGAP (Good Aquaculture Practice) Certification while others had certification from AquaGAP, Global Aquaculture Alliance, Friends of the Sea, Naturland, and SQF (Safe Quality Food).

At a Ministry of Agriculture and Rural Development (MARD) workshop on "Certification and Sustainable development of Pangasius", at the end of June, the DOF announced that it would use VietGAP a new national standard (modeled on GlobalGAP) covering ecosystem protection, food safety, social responsibility, traceability, public health and social welfare as a helping step for Vietnamese Pangasius farmers to gain GlobalGAP (Good Agriculture Practices), ASC (Aquaculture Stewardship Council) or SQF 1000 certification.

GlobalGAP certification is favoured in Western European markets, while the relatively new ASC standard is recommended for Holland and Germany.

The Vietnamese government assistance on certification has been welcomed by Vietnamese industry and overseas buyers, who now look forward to selling basa without having to counter unfounded negative media.

13.3.3 New Zealand

The New Zealand Ministry of Agriculture and Forestry is the AQIS nominated Competent Authority authorized to issue Health Certificates. New Zealand and Australia work in parallel on food safety matters under the FSANZ Code and share common standards. Also, Australia has Certification Arrangement with New Zealand whereby New Zealand seafood is released without inspection. Further details on the Trans Tasman Mutual Recognition Arrangement are available in Moir's (2009) review.

New Zealand has a strong fisheries management regime via its Total Allowable Commercial Catch and Quota Management System that ensures fishing is maintained at sustainable levels.

New Zealand's hoki fishery (blue grenadier) was one of the first fishery in the world to gain this qualification and has been re-certified by the Marine Stewardship Council.

In 2007 the Minister of Fisheries allocated more than NZ$4 million to securing sustainability certification for New Zealand's entire fisheries, a tangible demonstration of the government's confidence in the long-term sustainability of its fisheries.

New Zealand also has strong environmental interest with its aquaculture and participates in the WWF (World Wide Fund) Aquaculture Dialogues for molluscs with a goal to create performance-based standards for the ASC that will minimize the key social and environmental issues associated with mollusc farming, according to its national aquaculture organisation's website (http://www.aquaculture.org.nz).

It also notes that the New Zealand marine farmer's practices have been recognised by the International Conservation Organisation Blue Ocean Institute, ranking New Zealand Greenshell™ Mussels as one of the top two 'eco-friendly seafood' in the world.

13.3.4 China

The State General Administration of the People's Republic of China For Quality Supervision, Inspection and Quarantine AQSIQ; or - CIQ - Entry-Exit Inspection and Quarantine of the People's Republic of China are the AQIS nominated Competent Authorities.

China has a complex food safety supervision program involving more than six government agencies and the Chinese people have long favoured live seafood over chilled or frozen products; consequently national standards for frozen seafood have not received as much attention as they have in other countries, until recent times.

Some of China's seafood exports including shrimp and catfish were rejected in the USA and Australia in the early 2000s because of chemical residue levels according to industry sources.

The melamine tainted-milk food poisoning incidents in September 2008 resulted in several infants' deaths and precipitated concerted national and regional government action on strengthening and policing food safety standards, including those for seafood.

The Ministry of Agriculture reported in December 2008 that 95% of seafood products inspected that year met national standards. The Food Safety Law of 2010 introduced a new risk assessment food safety system with tighter regulations and stronger supervision and penalties for misuse of food additives or other infringements.

Most western "Chinese observers" are confident that China's food exports are indeed much better and safer than a few years ago. The CSIRO review of import inspections by Moir (2009) supports this assessment.

The situation with sustainable seafood from China is not so clear because Chinese government agencies and the populace have shown far less interest in regard to sustainable fisheries or aquaculture than food safety.

Nevertheless there has been progress with more and more export focused Chinese businesses working to sell environmentally friendly seafood. China's Zhangzidou Fishery Group, a very large integrated production, processing and distribution company, started working with the NGO Sustainable Fisheries Partnership (SFP) in the USA in order to develop a sustainable seafood strategy, according to a news item published by SeafoodSource.com. (Woolworths engaged SFP Australia this year to assist it in developing its sustainable sourcing strategy).

Jim Cannon, CEO of the Sustainable Fisheries Partnership, speaking at the Seafood Summit 2011 in Vancouver Canada said that the Chinese seafood exporters are both aware of and concerned about domestic fisheries

management. Peter Marshall CEO of seafood certifier Global Trust told SeafoodSource.com that significant growth of certification activity in China is driven by demand from USA retail giants such as Walmart that its suppliers are certified.

Global Trust certifies 39 seafood processors in China on behalf of the Global Aquaculture Alliance and the Marine Stewardship Council according to SeafoodSource.com news of 7 April this year.

China is moving forward on sustainability but is lagging most other major producing nations in ensuring sustainable seafood from aquaculture or fisheries.

13.4 General Observations And Discussion

Some Asian aquaculture produce, particularly prawns/shrimp and *Pangasius* were rejected in the 1990s and early 2000s because of unapproved antimicrobial chemical use or residues in seafood according to trade sources.

Regulatory pressures and market forces subsequently led to continual improvement in production, handling and processing activities in line with growing consumer and market expectations and few consignments these days are condemned or rejected by government import inspection or buyers.

The AQIS seafood inspection testing results reported by Moir (2009) are remarkably good but not really surprising given the enormous volume of produce exported and tested all around the world by demanding nations such as the USA, Japan, Australia and the EU. An earlier study of chemical and antimicrobial residues in aquaculture produce by FSANZ found no significant difference in the non-compliance rate of Australian and imported farmed seafood (FSANZ 2005).

Australia's food safety programs are working well and seafood is not often implicated in foods safety incidents compared to other foods. The imported seafood poses no more risk than Australian seafood and it is not dangerous, as some sensational media reports suggests.

The major supermarket and food service companies in the USA and the EU have made varying public commitments to sourcing more "sustainable" seafood, as have Coles and Woolworths recently. Unfortunately, these large buying companies are wanting different standards, and assurances on food safety and sustainability with each favouring one or two systems from a multitude of third party certification organisations.

This proliferation of certifying bodies has led to confusion throughout the seafood world, and for consumers too, and added to the ever growing costs for producers.

The focus on food safety and quality and "environmentally friendly" or "sustainable" seafood will however prove beneficial in the long term. Nevertheless farmers and fishers, or their produce, remain vulnerable to negative media attention generated by NGOs that make irresponsible and unsubstantiated attacks on them, and face challenging times.

The "red traffic light" listing of basa fillet in a seafood guide for consumers by WWF Germany last year and the subsequent reversal by WWF International, soon after, was a powerful example of this. The Brisbane based Australian Marine Conservation Society has been irresponsible with some of its unsubstantiated sweeping judgments on the sustainability of barramundi and shark fishing and salmon farming in Australia.

14. CONCLUSIONS

This study has fulfilled its objectives of reviewing the type and quality of official statistics, describing the composition of the import sector, documenting the composition, volume and value, trade flows, food safety, utilisation of imported seafood, its interaction with domestic produce and outlining likely changes in trade for key imports.

The quality of the official seafood import statistics compiled by ABS and available gratis from ABARES was generally good but not very timely; the price of the detailed more timely statistics available for purchase from the ABS is considered too high for general use. Several recommendations were made to overcome a few anomalies and deficiencies in the current statistics collection and publication arrangements.

A national workshop is recommended to bring industry and government import statistics users together to review the status quo, national needs and priorities and devise an action plan to provide more timely, reliable and relevant statistics.

The study has estimated that imports account for more than 70% of Australia's seafood consumption volume and will continue to underpin supply, consumption and profitability for the post harvest sector of the Australian seafood industry and the seafood related revenue of the food service sector.

Basa has proven a boon to consumers and businesses alike. Its low cost enables businesses to sell it at prices affordable to those living on the lowest budget and yet sufficiently high to offset the relatively lower profit margins obtained on most Australian produce.

With its omnivorous diet, and high economies of scale in farming, processing and sea transport, basa probably has the lowest "carbon footprint" of any seafood, an attribute that has not received due attention.

The expansion of the supermarkets' seafood trade has only come about because of the continuity of supply from affordable frozen aquaculture imports like basa and vannamei prawns (and domestic prawns and salmon), and the supermarkets have now become a powerful buying force rapidly and noticeably changing supply and demand for specific goods.

The implementation of tighter quarantine restrictions on whole raw prawns led to a shift in import supply to raw meat and cutlets and the rapid sales growth of a renewed product line, marinated prawn flesh. These products quickly recorded strong sales because they offer the "Holy Trinity" of convenience, quality and value, attributes proposed as the key to successful marketing of Australian seafood nearly a decade ago (Ruello & Associates 2005).

The **overall importance** of the import sector has gone unnoticed or ignored by much of the primary sector of the Australian seafood industry probably because it has focussed more on the price competition from the so called "cheap, inferior imports" and failed to notice that imports are increasingly likely

to be higher priced than domestic produce because of stronger supply continuity, quality, size grading or greater packaging options, or innovative ready to cook/eat products, in short, good value.

Producers who have taken the time to look closely at market interaction with imports recognise that quality and value are the keys to success. Queensland barramundi farmer Marty Phillips, recently returned from an overseas study tour on import competition, told Fish magazine "***At the end of the day, you have to have value for money in the product that you sell. It must represent good quality, it musn't have any product quality problems, it must always be exceptional value and I think that's where our industry should really be focusing its effort***" (Cussons 2011).

Government agencies too have not recognised the nutritional and economic contribution of the import sector because they traditionally have a strong export focus and see imports as a negative on the trade balance sheet.

Australian fishers and fish farmers commonly face strong costs-price squeeze and blame imports for a part of this situation. But for the prawn industry, the prevailing prices are a consequence of the steady volume growth from Australian and overseas aquaculture, increased supply from Australian wild catch fisheries and a strong A$ in the past few years coupled with a paucity of innovation and concerted action to stimulate demand.

Occasional brand or price promotions do little more than change market share, they do not generate lasting price rises and the immediate boost in sales volume fades away once the regular price returns.

The paradox is that consumers prefer fresh seafood to frozen, and fishmongers typically pay higher prices to source it for customers, but the trend in recent years has been for increasing volumes of frozen seafood, especially prawns, in supermarkets, and the number of fishmongers declines because of **their** costs-price squeeze. Yet few farmers or fishers, outside the NSW and southern Queensland fisheries, pursue the fresh prawn avenue, the segment that is effectively closed to imports; many Australian producers are just competing directly on price with the identical frozen imports.

Country of origin labelling (COOL) is seen by some producers as a panacea for the costs-price squeeze. COOL differentiates imports from local produce but it has not lifted prices for the Australian producer.

Australian seafood competes for a share of the public's discretionary spending dollar against other foods, other goods and services. But most of the seafood industry has invested relatively little in ongoing promotion to make seafood more enjoyable and "top of mind" and to strengthen seafood demand.

Seafood producers therefore have more to gain by looking on importers as allies rather than adversaries and collaborating to strengthen demand and gain a greater share of the consumer dollar for all seafood regardless of origin. This will become increasingly important as seafood prices rise because global demand is outstripping supply.

14.1 Planned Outcomes

The review of the type and quality of import statistics provided a number of recommendations for improving the collection and dissemination of Australian official statistics and identified the New Zealand Seafood Industry Council's statistics service as an excellent source of detailed reliable information on volumes and values of exports to Australia (and elsewhere).

The descriptive information and quantitative data presented in this study can be used to strengthen business planning and investment decisions across fishing, aquaculture, processing and marketing enterprises and thereby help increase profitability.

This detailed understanding will also strengthen government agency decision making and policy development in many areas including:

- fisheries and aquaculture management and development
- food safety and quarantine at national and regional levels
- food manufacturing and food security
- Research & Development in all of the above.

A technical review of the AQIS's testing protocols by CSIRO reported it as robust and that AQIS's imported seafood testing results indicated that Asian imports pose no greater food safety risk than those produced in New Zealand. Therefore there is credible factual information available to counter or dismiss outdated, mistaken or unreliable beliefs about imported seafood and reduce the amount of negative media that has damaged the image of the entire seafood distribution chain and undermined consumer confidence.

This report has provided the first detailed picture of the make up of the seafood import sector that will enable importers and other readers to gain a better understanding of the total business environment they operate in.

The factual information and enhanced understanding on imports developed through this project will now enable industry and government agencies to focus on the more important species, products, market segments and issues.

Some of the early findings of the study were shared with stakeholders but the final report will make all of the work widely available. A summary brochure to follow will facilitate dissemination of the key findings to government, industry and the broader community, particularly seafood lovers, through specialist (seafood industry and "foodie") and general media.

14.2 Benefits

The detailed information presented in this report can be used by industry and government for stronger decision making and priority setting.

Australian producers and consumers can feel confident that imported seafood safety is well managed and monitored. Industry and government organisations now have succinct factual information they can cite to minimise the negative media that has damaged the image of the seafood distribution chain, and government agencies responsible for protecting public health.

Importers and Australian producers now have a reliable account of the make up of the import sector and how it interacts with domestic production.

A number of overseas sources of reliable trade data were identified in this study and report.

ABARES has already been able to act upon early advice about inconsistencies in the use of the category label ***canned*** and ***canned prawns*** and a couple of other weaknesses in the annual Fisheries Statistics. This should make for better analyses of prawn trade for future users of these statistics.

Some early findings of the study were shared with stakeholders but a summary brochure to follow will facilitate dissemination of the key findings to government, industry and the public.

This study has highlighted the diversity, value and fundamental importance of imported seafood to the Australian diet and economy, facts that have often been overlooked or ignored. These facts will reduce speculation and make for a better informed industry, stakeholders, government agencies and the community at large.

14.3 Further Development

A summary brochure is to be published and launched at a media function in Sydney to facilitate dissemination of the key findings to government, industry and the broader community through specialist and general media.

A presentation reviewing pertinent findings from this study was given at the Australian Barramundi Farmers Association–Australian Prawn Farmers Association annual meeting in early August and one will be given at the Seafood Importers Association of Australasia's AGM in September, and will help draw attention to the availability of the final report and the forthcoming summary and facilitate dissemination of the findings.

The matter of import statistics (quantity and quality) warrants further examination by all industry sectors/organisations as to what they would like and what they are prepared to pay for. ABS and ABARES have limited funds but are capable of providing more detailed data if appropriate funding or paid subscriptions are provided. Seafood Service Australia has already started working with ABARES-ABS to help provide more timely import statistics on its website.

Within the import sector there were widely differing viewpoints on the use and purchase of statistics but mostly little willingness to pay for official statistics, however this would likely change once a good service actually arose. Other sectors would also likely have a number of views and so a national workshop on this subject with interested industry and government parties would be the best way to ascertain national needs and priorities and devise an action plan to achieve the desired outcomes.

Hopefully the release of this report will stimulate more informed discussion and further Research and Development on the import sector of the Australian seafood industry.

15. REFERENCES

ABARES, 2010. Australian fisheries statistics, 2009. 96pp. Canberra.

ABS, 2001. International merchandise trade, Australia, Concepts, sources and methods, 2001. ABS, Canberra. 8 pp.

Calogeras C, Morgan S, Sarneckis K, Cooper L and T Lee, 2011. Tracking the impacts on seafood consumption at dining venues arising from the Northern Territory's seafood labelling laws. Fisheries Research & Development Corporation Project Report 2009/216. 85pp. FRDC Canberra.

Cussons, D, 2011. Quality the key to overcoming market issues. Fish magazine 19(2) p 32. FRDC Canberra.

FRDC, 2006. Retail sale and consumption of seafood. Melbourne. Fisheries Research & Development Corporation. 30pp. FRDC Canberra.

FRDC, 2010a. Fish prices and value: A marketing challenge. FRDC Fact Sheet. August 2010. www.frdc.com.au.

FRDC, 2010b. Working together: The national fishing and aquaculture R D & E strategy. Fisheries Research & Development Corporation. 60 pp. FRDC Canberra.

FSANZ, 2005. Malachite green in aquacultured fish. Food Safety Australia New Zealand. Fact Sheet, December 2005. 2 pp.

Lobegeiger R and M Wingfield, 2010. Summary report to farmers. Aquaculture production survey Queensland 2008-09. DEEDI Report PR10-5151. 11pp.

Moir C, 2009. Review of the current testing protocols for imported seafood products. CSIRO Report R-661-03-11. 77pp. AQIS Canberra.

Ruello & Associates, 2002. Report on an Australian prawn market analysis. Prepared for the Australian Prawn Farmers Association. 35pp.

Ruello & Associates, 2005. The retail sale and consumption of seafood in Melbourne. Fisheries Research & Development Corporation Report 2004/249. Vol 1. 160pp. FRDC Canberra.

Ruello & Associates, 2008. Queensland seafood supply chain study. Report prepared for the Queensland. Department Primary Industries, Queensland Seafood Industry Association and the Queensland Seafood Marketers Association. 71 pp.

Yamprayoon J and K Sukhumparnich, 2010. Thai aquaculture: Achieving quality and safety through management and sustainability. J World Aqua. Soc. 41(2): 274-280.

16. ACKNOWLEDGEMENTS

Many people helped with this project but the following deserve personal acknowledgment:

Geoff Allan
Ewan Colquhoun
Andrew Cooper
Steve Costi
Gus Dannoon
Helen Jenkins
Pheroze Jungalwalla
Theo Kailis
Vincent Lee
Harry Peters
Marty Phillips
Perry Smith

Special thanks are due to the project steering committee : Col Bishop, Robert Curtotti, Norm Grant and Peter Horvat for their input and for reading a draft of the report. Lew Williams also contributed with a critical review of the draft and with other input.

Norm Grant, the Executive Officer of the Seafood Importers Association deserves acknowledgment for helping to get the “seed funds” for this project, and the FRDC deserves thanks for providing most of the project funding.

Finally, all the interview participants are thanked for taking the time to talk, on many occasions for some.

17. APPENDIX

17.1 Intellectual Property

The intellectual property arising from this study comprises the quantitative data presented in tables and in the text of this report volume.

The FRDC proportion of the project intellectual property is 100%

Appendix 2. Project Staff

Nick V. Ruello. Principal Investigator

Judith Woods. Administrative Contact.

Appendix 3a. New Zealand snapper export statistics for Australia 2008/9*

NETT	Jul 2008 -- Jun 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value	Month-to-Date: June - 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value
Snapper						
Finfish, Chilled Fillets						
Australia	487	7,927	16.28	150	3,686	24.57
Total for Finfish, Chilled Fillets	*487*	*7,927*		*150*	*3,686*	
Finfish, Chilled Headed and Gutted						
Australia	1,162	9,528	8.20			
Total for Finfish, Chilled Headed	*1,162*	*9,528*				
Finfish, Chilled Other form						
Australia	696	6,759	9.71			
Total for Finfish, Chilled Other fo	*696*	*6,759*				
Finfish, Chilled Whole						
Australia	2,163,479	20,443,294	9.45	160,028	1,570,438	9.81
Total for Finfish, Chilled Whole	*2,163,479*	*20,443,294*		*160,028*	*1,570,438*	
Finfish, Frozen Whole						
Australia	119	2,594	21.80			
Total for Finfish, Frozen Whole	*119*	*2,594*				
Total for Snapper	*2,165,943*	*20,470,102*		*160,178*	*1,574,124*	

* Statistics from New Zealand Seafood Industry Council subscription report

Appendix 3b. New Zealand John dory export statistics for Australia 2008/9*

NETT	Jul 2008 -- Jun 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value	Month-to-Date: June - 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value
John Dory						
Finfish, Chilled Fillets						
Australia	10,513	163,305	15.53	625	8,045	12.87
Total for Finfish, Chilled Fillets	*10,513*	*163,305*		*625*	*8,045*	
Finfish, Chilled Headed and Gutted						
Australia	13,338	157,826	11.83	1,821	23,576	12.95
Total for Finfish, Chilled Headed	*13,338*	*157,826*		*1,821*	*23,576*	
Finfish, Chilled Other form						
Australia	8,704	95,088	10.92	745	9,831	13.20
Total for Finfish, Chilled Other fo	*8,704*	*95,088*		*745*	*9,831*	
Finfish, Chilled Whole						
Australia	203,265	1,961,709	9.65	9,075	99,370	10.95
Total for Finfish, Chilled Whole	*203,265*	*1,961,709*		*9,075*	*99,370*	
Finfish, Frozen Fillets						
Australia	44,874	155,700	3.47			
Total for Finfish, Frozen Fillets	*44,874*	*155,700*				
Finfish, Frozen Headed and Gutted						
Australia	663	2,062	3.11			
Total for Finfish, Frozen Headed	*663*	*2,062*				
Finfish, Frozen Whole						
Australia	1,388	17,030	12.27			
Total for Finfish, Frozen Whole	*1,388*	*17,030*				
Total for John Dory	*282,745*	*2,552,720*		*12,266*	*140,822*	

* Statistics from New Zealand Seafood Industry Council subscription report

Appendix 3c. New Zealand ling export statistics for Australia 2008/9*

NETT	Jul 2008 -- Jun 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value	Month-to-Date: June - 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value
Ling						
Finfish, Chilled Fillets						
Australia	57,113	678,080	11.87	5,749	71,535	12.44
Total for Finfish, Chilled Fillets	*57,113*	*678,080*		*5,749*	*71,535*	
Finfish, Frozen Fillets						
Australia	658,701	6,823,150	10.36	41,451	404,974	9.77
Total for Finfish, Frozen Fillets	*658,701*	*6,823,150*		*41,451*	*404,974*	
Finfish, Frozen Headed and Gutted						
Australia	86,225	441,193	5.12	35,432	151,120	4.27
Total for Finfish, Frozen Headed	*86,225*	*441,193*		*35,432*	*151,120*	
Finfish, Frozen Other form						
Australia	40,219	235,938	5.87	12,026	61,293	5.10
Total for Finfish, Frozen Other fo	*40,219*	*235,938*		*12,026*	*61,293*	
Finfish, Frozen Whole						
Australia	4,059	46,838	11.54			
Total for Finfish, Frozen Whole	*4,059*	*46,838*				
Total for Ling	*846,317*	*8,225,199*		*94,658*	*688,922*	

* Statistics from New Zealand Seafood Industry Council subscription report

Appendix 3d. New Zealand blue eye (blue nose) export statistics for Australia 2008/9*

NETT	Jul 2008 -- Jun 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value	Month-to-Date: June - 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value
Bluenose						
Finfish, Chilled Fillets						
Australia	76,870	943,385	12.27	6,604	85,339	12.92
Total for Finfish, Chilled Fillets	*76,870*	*943,385*		*6,604*	*85,339*	
Finfish, Chilled Headed and Gutted						
Australia	366,086	4,241,639	11.59	20,302	254,002	12.51
Total for Finfish, Chilled Headed	*366,086*	*4,241,639*		*20,302*	*254,002*	
Finfish, Chilled Other form						
Australia	111,828	1,081,863	9.67	6,224	60,365	9.70
Total for Finfish, Chilled Other fo	*111,828*	*1,081,863*		*6,224*	*60,365*	
Finfish, Chilled Whole						
Australia	258,666	3,005,734	11.62	24,005	290,787	12.11
Total for Finfish, Chilled Whole	*258,666*	*3,005,734*		*24,005*	*290,787*	
Finfish, Frozen Fillets						
Australia	590	5,190	8.80			
Total for Finfish, Frozen Fillets	*590*	*5,190*				
Finfish, Frozen Other form						
Australia	24	388	16.17			
Total for Finfish, Frozen Other fo	*24*	*388*				
Finfish, Frozen Whole						
Australia	16	132	8.25			
Total for Finfish, Frozen Whole	*16*	*132*				
Total for Bluenose	*814,080*	*9,278,331*		*57,135*	*690,493*	

* Statistics from New Zealand Seafood Industry Council subscription report

Appendix 3e. New Zealand mussel export statistics for Australia 2008/9*

NETT	Jul 2008 -- Jun 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value	Month-to-Date: June - 2009 Weight (kg)	FOB* Value ($NZ)	Unit Value
Mussels						
Mussels, Freeze-dried pwd						
Australia	24,301	3,246,330	133.59	245	39,480	161.14
Total for Mussels, Freeze-dried	*24,301*	*3,246,330*		*245*	*39,480*	
Mussels, HS Fresh/Chld						
Australia	503	8,606	17.11			
Total for Mussels, HS Fresh/Chl	*503*	*8,606*				
Mussels, HS Frozen						
Australia	909,168	5,647,060	6.21	114,124	714,631	6.26
Total for Mussels, HS Frozen	*909,168*	*5,647,060*		*114,124*	*714,631*	
Mussels, Live						
Australia	3,892	26,835	6.89			
Total for Mussels, Live	*3,892*	*26,835*				
Mussels, Meat Chilled/Frsh						
Australia	2,086	24,882	11.93	191	3,478	18.21
Total for Mussels, Meat Chilled/	*2,086*	*24,882*		*191*	*3,478*	
Mussels, Meat Frozen						
Australia	891,734	6,659,370	7.47	90,725	682,910	7.53
Total for Mussels, Meat Frozen	*891,734*	*6,659,370*		*90,725*	*682,910*	
Mussels, Other not L/Ch/Fz						
Australia	10,714	61,563	5.75			
Total for Mussels, Other not L/C	*10,714*	*61,563*				
Mussels, Powder in capsule						
Australia	210	16,844	80.21			
Total for Mussels, Powder in ca	*210*	*16,844*				
Mussels, Pre'ed/Marinated						
Australia	450,886	3,454,047	7.66	27,978	216,211	7.73
Total for Mussels, Pre'ed/Marina	*450,886*	*3,454,047*		*27,978*	*216,211*	
Mussels, Proc in Can, Jar						
Australia	4,331	38,406	8.87			
Total for Mussels, Proc in Can,	*4,331*	*38,406*				
Mussels, Smoked						
Australia	3,404	65,220	19.16	247	5,040	20.40
Total for Mussels, Smoked	*3,404*	*65,220*		*247*	*5,040*	
Mussels, Whole Chilled						
Australia	1,745	9,857	5.65	250	1,692	6.77
Total for Mussels, Whole Chille	*1,745*	*9,857*		*250*	*1,692*	
Mussels, Whole Frozen						
Australia	849,215	2,209,558	2.60	53,390	131,584	2.46
Mussels						
Total for Mussels, Whole Frozen	*849,215*	*2,209,558*		*53,390*	*131,584*	
Total for Mussels	*3,152,189*	*21,468,578*		*287,150*	*1,795,026*	

* Statistics from New Zealand Seafood Industry Council subscription report

Appendix 4. Thai export procedure guidelines on the Thai Frozen Foods Association website (22 July 2011) http://www.thai-frozen.or.th/fandf3.asp

Export Procedures

After securing the license for company operation, the company has to follow the following steps for export of frozen marine product.

1. Apply for a license for factory operation from Department of Industrial Works, Ministry of Industry.

2. Apply for a license for food producing from the Food and Drug Administration, Ministry of Public Health. Refer to the notification of Ministry of Public Health no.193/543, Food factory shall be follow to good manufacturing practice criteria on food hygiene.

3. In the year 2004, the cabinet empowered the Department of Fisheries to be a control and monitoring division for fishery products export to all countries. Department of Fisheries handles these:

   3.1 Inspect the factory sanitary standard to meet GMP (Good Manufacturing Practice) or HACCP (Hazard Analysis Critical Control Points) standard which including

   - Plant structure
   - Equipment
   - Chemical and Packaging
   - Hygienic and sanitation
   - Facilities
   - Personal hygiene
   - Processing Practice

   3.2 Establish plants grade and sampling rate at different frequencies depending on their performances and plant facilities. The plants grade could be divided into 4 grade:

   - Grade 1 efficiency of quality system – sampling every 3 months
   - Grade 2 efficiency of quality system but have 1 serious point – sampling every 2 months
   - Grade 3 to rectify quality system – sampling every 2 weeks
   - Grade 4 to rectify quality system and have 2 serious points – sampling lot by lot

   3.3 Inspect export samples and issue Health Certificate in accordance with importing countries standard. The samples are subsequently analyzed for chemical, microbiological and physical quality.

   At present, 70% of exporter can apply for Health Certificate by internet.