

HOOKING INTO ASIAN SEAFOOD MARKETS

OUTCOMES & OPPORTUNITIES

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2. Non Technical Summary

97/342 HOOKING INTO ASIAN SEAFOOD MARKETS – OUTCOMES AND OPPORTUNITIES

OBJECTIVES:

Commercial development of selected under utilised Australian fisheries resources for Asian markets

This project has addressed the Fisheries Research and Development Corporation (FRDC) program 'Industry Development' and its key areas of 'market development' and 'value adding'. By international standards, Australia's wild catch resources consist of low volume fisheries that are unlikely to increase in volume. The only way to significantly increase the value of this resource is to find either new or higher valued markets or market species that are currently under utilised or under valued.

Accordingly, the aim of this project was to find ways to increase the value of Australian wild catch seafood resources by developing new products or finding new markets for one or more of the species that are currently under valued or utilised. Subsequently, a process involving market analysis, species analysis and determining marketing requirements has identified certain commercial opportunities.

Communication with the seafood industry has been an essential part of the project. Expressions of interest were sought from industry and these have since been matched with potential opportunities. As the project progressed, new industry partners were located to take advantage of new opportunities.

A steering committee of industry personnel from throughout Australia met four times during the project to provide a mentoring, advisory and evaluation role.

Project objectives

The objectives were:

- To identify and select certain sustainable Australian under utilised fisheries resources and potential Asian markets suitable for their commercial development.
- To identify product opportunities and customer needs through in-market research.
- To develop product concepts, product design specifications, product samples and identify suitable commercial partners capable of producing the export product from the identified under utilised species.
- To produce product prototypes that meet market requirements.
- To have at least one product available for sale in an Asian market.
- To document a model for future commercialisation of other species by industry.

How project objectives were achieved

The project team and the steering committee analysed the situation of approximately sixty Australian under utilised species. Accessibility and sustainability of supply were the main selection criteria. A short list of nine high-priority seafood species was produced as the first group to be considered for their commercial potential in Asia. An analysis of thirteen Asian countries was also carried out, resulting in a short list of four markets with the most significant potential.

The project team conducted investigations in the respective markets. Regarding potential opportunities for the selected species, reports on Japan, Singapore, Hong Kong and China were completed and distributed to industry personnel on request.

From the in-market research and after studying Australian supply capabilities, a range of product concepts for the selected species was also developed. Product concepts that were selected by the steering committee to be considered for Asian markets include:

- | | |
|---|--|
| ➤ Rabbitfish (<i>Siganus spinus</i>)
formerly black trevally | Whole fresh, with roe |
| ➤ Saddletail Seaperch (<i>Lutjanus malabaricus</i>)
and Crimson Seaperch (<i>L. erythropterus</i>)
formerly red and scarlet snapper | Fresh - whole or gutted
Frozen - whole or head on and gutted |
| ➤ Horseshoe Leatherjackets
(<i>Meuschenia hippocrepis</i>) | Live
Fresh - whole or gutted |
| ➤ Sea Mullet (<i>Mugil cephalus</i>) | Frozen - whole IQF & graded, or gutted
Smoked - vacuum packed fillets |
| ➤ Australian Salmon (<i>Arripis trutta</i>) | Frozen - whole |
| ➤ Queenfish (<i>Scomberoides commersonianus</i>) | Fresh - whole |
| ➤ Morwong (<i>Nemadactylus macropterus</i>) | Fresh - fillets |

Sales of fresh gutted saddletail and crimson seaperch and of whole fresh horseshoe leatherjackets were achieved. Orders for rabbitfish could not be filled due to the onset of bad weather when the fish had to be caught.

Potential for selling frozen whole mullet, frozen whole Australian salmon and smoked mullet fillets was indicated, with sales likely to depend on the catching seasons. There were also contingent negotiations for a weekly supply of morwong fillets. Market possibilities for a range of other under utilised species, not selected for this project, were also identified.

A number of publications covering each of the specific markets are also available from Queensland Department of Primary Industries. Refer to page 5 for a complete list.

Conclusions

The final report contains a detailed summary of the research and efforts undertaken to market a selection of Australian under utilised and under valued species products. Strong links have been established with Supermarket to Asia, Austrade, and Queensland State Government Offices in Asia. The marketing information generated, pertaining to a wide range of species and market conditions, plus the experience and prominence gained by commercial operators from exhibiting in Asian seafood shows, will be valuable to both current and future Australian seafood exporters.

The importance of the Asian market and the issues being addressed in this project have been recognised in the development and funding of a new *Hooking Into Asian Seafood Markets* project to operate from 1 July 1999.

KEYWORDS	seafood, under utilised species, China, Japan, Hong Kong, Singapore, Supermarket to Asia, trade fairs, Asian seafood shows
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3. Background

This project was instigated following a Hong Kong food and promotional fair in April 1995, organised by the Queensland Government, at which four under utilised species were introduced. These aroused considerable interest among local traders and importers. The four species were southern swallowtail dart (*Trachinotus velox*), sea mullet (*Mugil cephalua*), queenfish (*Scomberoides lysan*) and Australian salmon (*Arripis trutta*). However, despite the interest shown, no significant gains were achieved into any Asian market. In view of the apparent success of the fair, the lack of a concerted marketing strategy was later considered to be the principal reason for failing to generate commercial sales.

Subsequent study indicated there was a lack of strategic efforts to develop commercial markets for several other species caught in similar quantities around Australia. The *Hooking Into Asian Seafood Markets* project, hereafter referred to as HIASM, was initially created to determine which currently under utilised species are suitable for commercial market development.

4. Need

The *HIASM* project was designed to address the FRDC's 'Industry Development' program in the key areas of 'value adding' and 'market development'. With demand for fish and other seafood continuing to increase, but limited potential for future growth in wild catches, there was an obvious need to improve utilisation of wild catch resources. Compared to neighbouring countries, Australia is considered to have a high proportion of under utilised species. Some of these are regarded as valuable plate fish in Asia, but are used only for bait in Australia.

In a development based on identification of market requirements, processing of mullet roe into *karasumi* represents one instance of a previously under valued product becoming value added. Such examples highlighted the need for research and technical support to realise the commercial opportunities of currently under utilised species.

It was envisaged that a combination of marketing and technical expertise in value adding would improve the saleability of some species and encourage the harvesting of other species currently not considered economically viable in Australia. It was therefore essential that the species chosen represent sustainable fisheries resources.

5. Objectives

HIASM sought to identify profitable commercial opportunities within the Asian region for a selection of under utilised and under valued species products.

- To identify and select certain sustainable Australian under utilised fisheries resources and potential Asian markets suitable for their commercial development.
- To identify product opportunities and customer needs through in-market research.
- To develop product concepts, product design specifications, product samples and identify suitable commercial partners capable of producing the export product from the identified under utilised species.
- To produce product prototypes that meet market requirements.
- To have at least one product available for sale in an Asian market.
- To document a model for future commercialisation of other species by industry.

6. Methods

The *HIASM* project officially began in July 1997 and concluded nineteen months later in February 1999. It was sponsored by the Fisheries Research and Development Corporation, which contributed \$284,073 of the total budget allocation of \$337,823. The Queensland Department of Primary Industries (QDPI) financed the rest, while commercial participants registered with the project provided assistance in-kind.

A steering committee was formed to ensure that the project maintained a practical and commercial focus. This comprised industry leaders, peak organisations and government representatives from around Australia, and met on four occasions during the *HIASM* project. Because of its significance to the fishing industry, the high-level steering committee also ensured that the project had priority access to resources as required.

Led by senior management, the project team consisted of specialist QDPI officers including a principal investigator, a co-investigator and particular market specialists as required. (For further details of the project team and the steering committee, see page 21.)

Provisions were made for project personnel to conduct in-depth market research in the target markets, as well as to lead one trade mission of five seafood operators to attend the China Fisheries and Seafood Expo 1998 in Dalian. The *HIASM* project co-exhibited with Supermarket to Asia under the Quality Food Australia program at the Dalian exhibition, which proved highly successful and valuable in terms of research and marketing.

In-country research was conducted during
three trade missions to four markets.

TRADE MISSIONS

<i>Singapore</i>	<i>6 December – 12 December 1997</i>
<i>Japan</i>	<i>19 January – 1 February 1998</i>
<i>Hong Kong & China</i>	<i>17 February – 3 March 1998</i>

The *HIASM* project team also organised and led
a trade delegation of five seafood traders to the
China Fisheries and Seafood Expo 98 – Dalian, China 27-29 October 1998

As part of the assessment and monitoring process, seven milestones were established to help the project stay on course in terms of its objectives. These were;

- ❖ Milestone Stage 1 – Reference Group / Steering Committee appointed.
- ❖ Milestone Stage 2 – Species and target markets identified.
- ❖ Milestone Stage 3 – Identification of product opportunities and customer needs.
In-country research completed.
- ❖ Milestone Stage 4 – Concept development completed.
- ❖ Milestone Stage 5 – Product and process development completed.
- ❖ Milestone Stage 6 – Market assessment of prototype. In-country research completed.
- ❖ Milestone Stage 7 – Commercialisation process completed. Final report to FRDC.

In addition to meeting of the project's milestones, the following publications were produced;

- *The Potential for Australian Under Utilised Seafood Species*
- *Identification of Under Utilised Species Markets – Part 1; Species Selection*
- *Identification of Under Utilised Species Markets – Part 2; Market Selection*
- *An Analysis of Asian markets for Seafood Products*
- *Japan – The Potential for Australian Under Utilised Seafood Species*
- *China – The Potential for Australian Under Utilised Seafood Species*
- *Hong Kong – The Potential for Australian Under Utilised Seafood Species*
- *Singapore – The Potential for Australian Under Utilised Seafood Species*

6.1 Species selected

In consultation with industry representatives, including commercial and recreational fishers, fishery managers and fish processors/exporters, a list of about sixty under utilised or under valued species was compiled and ranked according to locality, availability, accessibility, current value, regulatory or commercial restrictions, sustainability of numbers, potential utilisation and potential value.

Additional information and supporting evidence was gathered from officials of State government fisheries departments, national and international news media and the direct experience of project team members. The list of sixty prioritised species was reduced to those that appeared most worthwhile with respect to identifying commercial opportunities in the selected markets. The Steering Committee's final selection consisted of nine species:

- ❖ Albacore (Thunnus alalunga)
formerly Albacore tuna
- ❖ Australian Salmon (Arripis trutta)
also known as black salmon, kahawai, salmon trout etc
- ❖ Morwong (Nemadactylus macropterus)
also known as butterfish, jackass or king morwong, terakihi, rubberlip etc
- ❖ Ocean Jacket (Nelusetta ayraudi)
also known as chinaman leatherjacket, yellow jacket or leatherjacket.
- ❖ Queenfish (Scomberoides commersonianus)
also known as giant dart, skinnyfish, talang queenfish and leatherskin.
- ❖ Rabbitfish (Siganus spinus)
formerly black trevally, also known as happy moments or spinefoot.
- ❖ Sea Mullet (Mugil cephalus)
also known as bully or hardgut mullet, poddy or river mullet etc
- ❖ Saddletail Seaperch (Lutjanus malabaricus)
& Crimson Seaperch (L. erythropterus)
formerly red snapper, ruby emperor, crimson or scarlet snapper or saddletail etc
- ❖ Silver Warehou (Serirolella punctata)
also known as snottynose or spotted trevally, trevally etc

NB: Horseshoe Leatherjacket (*Meuschenia hippocrepis*) was added to the list in late 1998. For more detail on the species selection process, refer to the *Hooking Into Asian Seafood Markets Stage 2: Identification of Under Utilised Species and Markets Part 1 - Species Selection*.

All fish names referenced from the *Australian Seafood Handbook; Domestic Species* (1999).

6.2 Countries selected

6.2.1 Why an Asia focus

Despite its recent economic downturn, Asia remains the dominant market for Australian seafood exports. Measuring value against tonnage for 1997, Japan (41% / 42%)¹, Hong Kong / China (27% / 22%), Taiwan (18% / 15%) and other Asian markets accounted for some 90% of Australia's total seafood exports. In 1997/98, that equated to sales worth A\$441 million to Japan, A\$119 million to China, A\$227 million to Hong Kong and A\$37 million to Singapore (ABARE 1998). Australia's largest non-Asian market in that period was the USA with around 6% of total export value and volume. The entire European market for Australian seafood accounted for less than the value and tonnage exported to Singapore (3% / 3%) (Chu 1998) (ABARE 1998).

There is little doubt that Asia will remain the dominant market for Australian seafood exports, the long term prospects of which remain buoyant. However, the Asian economic downturn has highlighted the industry's need to further diversify its market base and cultivate stronger supplier-buyer links for Australian products.

6.2.2 Summary of country selection process

A two stage process was employed in the country selection process. Stage one assessed the socio-economic and market features of Asian countries including Brunei, Cambodia, China, Hong Kong, Indonesia, Japan, Laos, Malaysia, Philippines, Singapore, South Korea, Taiwan and Thailand. These were assessed according to various factors including their current and potential market size, quantity and value of imported seafood, GDP, consumption and expenditure on seafood, and projected economic and population growth.

After applying practical criteria, five countries and one territory remained under consideration in stage two. These were China, Hong Kong, Japan, Singapore, South Korea and Taiwan. The selection process then involved examining Australia's competitors in the respective seafood markets, the distribution systems available, domestic production capabilities, relevant import restrictions, consumption rates and foreseeable market opportunities. Final selection depended on evidence that a substantial market existed, or at least a significant expectation of further market growth.

Taiwan was discounted due to its high tariff and regulatory barriers favouring the United States for all imports, as well as its highly successful aquaculture fish breeding programs. South Korea was discounted because of the likely greater impact of the 'Asian crisis' on its domestic market. The four target markets chosen were Japan, China, Hong Kong and Singapore.

¹ (value% / tonnage%) and for each subsequent market listed in the sentence.



In spite of the economic downturn, Japan remains the world's second largest economy after the USA, and the largest seafood market. The main source of protein in the Japanese diet continues to be sourced from seafood. This is unlikely to change in the foreseeable future.



China seems an obvious choice, many economists estimating that over the next fifty years China will become the world's largest economy. It is likely to become the largest importer of seafood early next century (Supermarket to Asia 1998). An estimated one trillion US dollars will be spent over the next three years upgrading infrastructure (Waldrop 1998). This will improve China's seafood handling and transportation capacity and increase consumer access to seafood.



In some ways it is expedient to view Hong Kong as part of the Chinese market, but for the purposes of this report Hong Kong was considered separately. This was mainly due to the legal and institutional differences operating in Hong Kong, although it conveniently allows a separate assessment of the southern Chinese market preferences as distinct from those of the northern and Shanghai regions.



Although Singapore represents a relatively small market compared to other Asian markets, it exceeds the total European volume in terms of Australian seafood imports, and continues to grow. Singapore has a tariff free market with transparent distribution, and was considered to support a sufficiently affluent middle class to sustain further market development.

Currency Exchange Rates for Selected Markets

Research in the four markets was conducted over an extended period of time during which considerable currency fluctuations occurred. Nevertheless, this report has adopted one standard rate for each market as a reasonable approximation for converting currency. These exchange rates are;

Japan – yen	¥80	= A\$1.00
China – renminbi	¥5	= A\$1.00
Hong Kong - dollar	\$5	= A\$1.00
Singapore - dollar	\$1.05	= A\$1.00

7. Results

The project reviewed commercial opportunities for the following species:

- Albacore
- Australian Salmon
- Morwong
- Ocean Jacket and Horseshoe Leatherjacket
- Queenfish
- Rabbitfish
- Saddletail and Crimson Seaperch
- Sea Mullet
- Silver Warehou
- *Thunnus alalunga*
- *Arripis trutta*
- *Nemadactylus macropterus*
- *Nelusetta ayraudi*
Meuschenia hippocrepis
- *Scomberoides commersonianus*
- *Siganus spinus*
- *Lutjanus malabaricus*, *L. erythropterus*
- *Mugil cephalus*
- *Seriolella punctata*

Overview of the four selected seafood markets

These species were subsequently tested in the four chosen target markets; Japan, China, Hong Kong and Singapore.

The volume and variety of imports into Japan's seafood market, combined with its conservatism, result in one of the most competitive markets of any kind to enter. The Japanese tend to be parochial in believing that seafood which is processed or prepared outside of Japan is inferior to the domestic product. The predilection for live or fresh unprocessed imports, guaranteeing freshness for local preparation, makes any value adding extremely difficult unless a top quality product is heavily supported by sustained marketing. Another hurdle is the perception that freshness is substantially diminished after a few hours of preparation.

This preference for live or fresh seafood is also valid in Hong Kong and China where health issues relating to food and its preparation have become a dominant issue in recent years due to a number of contaminated food incidents.

Apart from price sensitivity, the Chinese market presents intrinsic difficulties relating to poor infrastructure and handling facilities, inconsistent or 'invisible' regulations, and non-transparent distribution systems. Consequently, this developing and potentially lucrative market presents a trade environment of many challenges.

Hong Kong and Singapore both pose fewer barriers, but have significantly smaller consumer bases. In many ways these markets are mature, reducing although not eliminating opportunities. Hong Kong is particularly conscious of food safety and quality, which are increasingly prominent issues in all the target markets. Since 1997, there have been a number of serious contaminated food incidents involving ice-cream, vegetables, poultry, pork and seafood causing illness and fatalities. Similar though unconfirmed reports have emerged from China. Generally, safety guarantees in food production and preparation will be of increasing consumer concern supported by government regulation.

Due to the strong market position of live seafood in Hong Kong, demand for other product types is significantly lower. Clinging to the concept that a live fish is a healthy fish, Hong Kong consumers prefer product to be alive just prior to consumption so as to reduce the chance of contamination. This may indicate low consumer confidence in post-slaughter handling and preparation, but there is still a market for frozen and processed seafood. All major supermarkets stock a wide selection of frozen product including whole fish, fillets, cutlets and fish balls. As in other countries, supermarkets are also introducing more convenience meals in their fresh food counters. These contain seafood products such as fish, mussels and cuttlefish with fresh vegetables.

Singapore would appear to be the easiest seafood market to enter due to the consumers' preparedness to try new products, as well as readier acceptance of adequate rather than premium standards if the price is right. However, this means that competition is substantial. Maintaining a consistent market share requires considerable marketing resources to place product on shelves and into shopping trolleys until it becomes better established.

Marketing a new seafood product in any of the four target markets must take into account the higher level of sophistication and seafood knowledge of the majority of Asian consumers compared to that of Australians. Extensive research into the diets and purchasing habits of significant market segments such as housewives, the aged, youth, the middle class, blue-collar employees and office workers is advisable.

Australia does not have an apparent capability to compete on price and volume in the lower end of these markets. However, there may be opportunities in the upper end of the market and in some boutique and niche markets for processed products such as *katsubushi* in Japan and smoked vacuum packed mullet fillets in China. Japan still pays relatively high prices for quality finfish suitable for *sushi* and *sashimi*. The necessary high oil content is generally found in cold water fish. Japanese consumers are knowledgeable about seafood, a major component of their diet. Fish oil content and liver sizes are of interest to the Japanese for a variety of products. An assessment of these features should be made for any future selected project species with regard to satisfying Japanese customer enquiries.

Some common elements among the four identified markets are as follows:

- Strong preference for live or fresh seafood.
- Preference for small plate sized whole fish or single portion quantities.
- Belief in the health benefits of consuming whole fish.
- Perception of canned fish as generally sub-standard (with a few exceptions).
- Restricted availability of frozen seafood due to limited infrastructure for handling frozen produce or limited fridge space.
- Growing popularity of frozen food among consumers, particularly in China where live or fresh seafood is difficult to preserve and transport.

Opportunities for Selected Under Utilised Species

Albacore (Thunnus alalunga)

Known as 'chicken of the sea' in Japan, albacore is highly regarded as a canned fish for export, and the species is well known in all four markets. The Japanese catch about 10,000 tonnes of albacore a year for frozen export to the United States for canning. With the current global glut of cheap albacore, demand for the species is extremely poor, with no interest being expressed by any of the seafood traders interviewed. However, if predictions of declining fish stocks around the globe are realised, the market may absorb this present glut over the subsequent few years.

Tuna is not popular in China, due to the dark flesh and being too large for the home or restaurant plate as a whole fish. Various superstitions reasons are provided as to why Chinese people prefer to serve whole fish, however, limited refrigeration is also likely to be a contributing factor. The demand for albacore is extremely limited, with no interest shown by any of the contacts in China. Even free samples were rejected. Traders in Hong Kong and Singapore gave the same response.

Australian Salmon (Arripis trutta)

Confusion between the names of Australian and Atlantic salmon was a major issue among all importers approached in the four markets. Many of those interviewed were initially interested in the species until they saw how dissimilar the samples were from Norwegian Salmon. Despite the favourable price difference, many in the market would not consider the species because of the strong market position held by the Norwegian product and the popularity of that species with consumers. Although it was clearly demonstrated that Australian salmon is completely distinct from the Norwegian product, the term 'salmon' is virtually synonymous with Norwegian Atlantic salmon and automatic comparisons were made.

Some Japanese importers had previously considered Australian salmon for grilling or frying. However, they regarded it as similar to mackerel and bonito, both available in larger volumes from South America at less than US\$1.00 per kilo. With fresh chilled Australian salmon valued at around ¥200 - ¥400 per kilo (A\$2.50 - A\$5.00), it would not be competitive. (In 1999, increased Japanese interest in Australian sourced Bonito arose due to a poor South American harvest early in the season.)

Chinese importers and processors expressed some interest in Australian salmon, but price competitiveness was crucial, while possible inability to supply a letter of credit was quoted as a negative point. Another was unfamiliarity with the species among Chinese consumers. There was no interest shown in either Singapore or Hong Kong once confusion over the name had been disposed of. In response to samples, Singapore importers commented negatively on the darkness of the flesh. This feature is unfavourable in most Asian markets where white or pink flesh is generally seen as ideal. Reprocessing or smoking of Australian salmon could be a legitimate means of bypassing the consumer preference for light coloured flesh.

With overwhelming indications of the inappropriateness of the name of this species in the Asian context, adoption of the New Zealand name of Kahawai or a more targeted marketing name is extremely advisable. While it is uncertain that importers would be more inclined to consider the species under a different name, there is no doubt that confusion based on the current name strongly limits the commercial opportunities. Interest in this species appears restricted to China, where price and the temporary credit squeeze remains an obstacle.

Morwong (Nemadactylus macropterus)

Morwong, known as 'yanobaru' or sea bream in Japan, is readily available from a Kyushu fishery and East Asian countries. Sufficiently oily, it is used for *sashimi*, frying and grilling, sold to consumers in tray-packed prepared portions for home cooking. Sales of New Zealand morwong, marketed as *Tarakihi*, have recently dried up due to the Japanese recession, forcing prices down to A\$6.00 a kilo for chilled product. The remaining market in Japan is currently catered for with cheaper stock.

Morwong is not known in China, though there was some interest in the product as frozen whole product for supermarkets and hotels. However, the emphasis was still on price competitiveness. Hong Kong respondents also knew little of the species and compared it to the significantly cheaper locally caught sea bream. Hong Kong has limited interest in seafood products other than live or chilled, and was therefore unwilling to accept frozen or processed morwong. As with China, there is a small niche market for frozen fillets in the catering sector.

Morwong was known in the Singapore market, having been previously introduced. However, importers who had handled the product did not fare well from it financially. As a result the species was 'tainted' by past failures. Successful marketing of morwong would require significant resources and a well planned strategy to regain the confidence of Singaporean importers.

Ocean Jacket (Nelusetta ayraudi)

Ocean jacket is an established species in both Hong Kong and Japan, the Japanese consuming it mainly between November and February in steamboat or hot-pot meals. Product must be fresh and quality very high. Consequently, ocean jacket is sold live or fresh chilled, whole or shouldered. Top quality product is also used in *sashimi*. Dried salted ocean jacket is imported from China and South Korea and is consumed all year round as a bar snack. This is almost a commodity product and difficult to compete with on price. In Hong Kong, ocean jacket is available wholesale at around A\$2.00 – A\$3.00 for specimens 30cm long. Small, shouldered ocean jacket 5 - 7cm long from Indonesia sells for HK\$75 (A\$15) per kilo packed on trays in supermarkets. Singapore also has access to abundant local supplies, with whole skin-off ocean jacket achieving A\$3.80 – A\$4.30 per kilo.

Coming from a 'new' source, the initial price for Australian ocean jacket in Japan would be approximately ¥2000 or A\$16.00 per kilogram for live product under normal circumstances. Due to the current Japanese economic climate and availability of cheaper stock from north Asia, this price is probably not obtainable, though further consideration is warranted in the future. Headed gutted skinned frozen product was considered uneconomical for Australian fisherman at ¥400 or A\$5.00 per kilogram.

Overall opportunities for the Australian product seem limited in Singapore, Hong Kong and China, with good supplies of Indonesian and locally caught product. Moreover, the local product is supplied fresh, further reducing opportunities for frozen product in the market. Local availability also affects the market price, with Australian suppliers likely to find the current price too low. It is treated as a commodity retailing for A\$3 - A\$5 per kilogram. Singaporean supermarkets were promoting the fish at the time of the in-country research, and it appeared doubtful that the Australia ocean jacket could compete with the low cost, quality fish from Indonesia at this time, especially with the current market demand for fresh product.

Horseshoe Leatherjacket (Meuschenia hippocrepis)

As this product was introduced late in the project, it was not adequately tested in any of the markets. Feedback on photos supplied to Japan included a comment that it looked too much like an aquarium fish, although sales are possible if the species is proven to have a relatively large liver. Further tests need to be conducted to ascertain the range in liver size. Being a cold water species is also a favourable indicator for oil content. There was limited opportunity to introduce the species to the Singapore market.

The response in China and Hong Kong was much more positive, with the attractive colouring considered a bonus. Chinese importers expressed considerable interest in importing the fish live for restaurants in Beijing and Shanghai, but at the time of print no successful shipment of live samples has been achieved. A chilled commercial sample was sent to Hong Kong. However, as the sample did not meet specified requirements, this commercial opportunity may have been lost. More research on the species is required, including assessment of possible returns if it is also marketed as an aquarium fish. A number of fishers from the Port Philip Bay region expressed the wish to establish a market for horseshoe leatherjacket, which is caught with wrasse reputedly at a ratio of ten to one.

Queenfish (Scomberoides commersonianus)

Queenfish is largely unknown in all the target markets. There were mixed signals for this species with indications that it was considered holy by some ethnic Chinese in Singapore. (The dots along the flanks were considered symbolic fingerprints of a deity.) However, Hong Kong traders expressed no concern about any 'religious' status. The Japanese were keen on its pink flesh with firm texture and relatively high oiliness, making it suitable for grilling. A detailed analysis of the fish's monthly oil content will be needed to satisfy the Japanese preference for consuming fish during the period of peak oil content and the obscurity of queenfish must be overcome before good prices and volumes are returned. As part of a long-term market entry strategy, samples continue to be forwarded to Japan along with spotted mackerel.

Some Chinese interest was based on the similarity of queenfish to their local dart fish and a suggested name was 'Australian Dart Fish', however, this would cause confusion with the true darts (*trachinotus* sp.) if they were exported and therefore not recommended. As in the case of Australian salmon, renaming a species to capture an export market niche may be desirable. While domestic renaming depends on the Seafood Marketing Names Review Group and CSIRO's stringent assessment involving current name and labelling, this is not binding on exports. However, care should be taken to avoid creating problems, as shown in the above example.

China tends to acknowledge Australia's 'green and clean' status and this image may provide a marketing advantage over the Chinese dart fish. This is not transferable to the Singapore market where the queenfish's apparent 'holy' status represents a potential obstacle. There was significant interest in whole and filleted queenfish for the Hong Kong catering industry, however, current filleting techniques result in an undesirable darkening of the flesh that will need to be addressed. The prospects in the market for this species are again somewhat hindered by market demand for freshness, with interest in frozen seafood being primarily limited to niche markets. Nevertheless, there was interest in exporting frozen queenfish to outlets in China. This suggests that the prospects for queenfish as a frozen product in China may be better than the current prospects in Hong Kong, with additional prospects in Japan for chilled product if a high oil content is confirmed.

Rabbitfish (Siganus spinus)

Generally unknown in Japan, the fish is considered too 'ugly' or 'scary' by Japanese and northern Chinese to be sold whole, and considered too small to sell as fillets. There appears to be a small market for a similar species known as 'higo', but this is restricted to Kobe where the fish are sold fresh chilled for grilling.

Singapore has an established market for a look-a-like called *peh tor* (meaning 'white stomach'). This is marketed under several names including 'little happy moments' and 'spotted rabbit fish'. Australian rabbitfish could either supplement this market or substitute *peh tor* during the Chinese New Year festivities when demand for it is greatest. The premium price fetched by *peh tor* during this festival means that the slightly larger, better roed and hence superior Australian fish would be quite competitive. The Chinese New Year period therefore provides an excellent opportunity to enter the market. Maintaining sales levels after the festive season could be difficult in view of strong, cheap, Indonesian supplies. However, with sustained marketing and quality control, establishing a foothold in this niche market is possible as the Singapore economy improves.

Although southern China and Hong Kong are familiar with *peh tor*, it appears less popular than it is in Singapore. An abundance of Chinese and Indonesian live and frozen *peh tor* is available at wholesalers, traditional wet markets and supermarket chains. Apart from during the festive period in Singapore, the prospects of exporting rabbitfish are therefore limited. Traders interviewed in Shanghai and Jinan showed no interest in the species.

Attempts to fill orders of rabbitfish during the 1998 and 1999 Chinese New Years had disappointing results as stock failed to materialise in time. While present interest appears confined to Singapore, further investigation of the Hong Kong and Guangdong markets may reveal similar seasonal potential with market prices rising sufficiently to meet Australian costs. Singapore retailers sell *peh tor* at the higher end of the market, packaged whole, and usually four fish to a 400 gram tray.

Saddletail and Crimson Seaperch (L. malabaricus, L. erythropterus)

Small amounts of frozen saddletail seaperch and crimson seaperch are imported into Japan from Indonesia at about US\$1.80 per kilogram for hot pots during winter. These species are often called red snapper and in Japan is often confused with New Zealand snapper (*Chrysophrus auratus*), also known as red sea bream. The New Zealand species is more acceptable in the Japanese market place because it is very similar to the local species, which is almost a commodity product.

Frozen European red fish fillets, processed in China, pose significant competition at US\$5.00 per kilogram. A twenty kilogram sample of top quality frozen saddletail and crimson seaperch was sent to Kyoto where it received a favourable reception but no sales. This 'favourable' response may have been merely protocol, but it is likely that more competitive prices for similar quality stock from Indonesia forestalled any further interest.

In China, the commercial opportunities for seaperch was handicapped by its similarity in colour and appearance to that of some locally caught species. As a result, saddletail and crimson seaperch were expected to compete with local species such as sea bream and hussar in terms of price and quality. The wholesale price offered by Carrefour Supermarket in Shenzhen was ¥24.00 (A\$4.30) per kilogram for frozen product.

Singapore has both species readily supplied from Indonesia, with skin-on fillets retailing for around A\$15.60 per kilogram. Indonesia is able to supply larger quality product (generally under two kilograms) at a lower cost than is currently viable for Australian fishers. However, there is a possible market in China for frozen fillets to five star hotels and western style restaurants. In particular, the positive support from expatriate Australian chefs in China (and elsewhere) could be employed as leverage into this market.

As a result of several market factors, the prospects for saddletail and crimson seaperch in Hong Kong seem limited in the short term. According to those interviewed, 'similar' species are available in the market, all of which come from the South China Sea. Although these are quite distinct from saddletail and crimson seaperch, the general mindset in the Hong Kong market seems to group all red coloured fish together. Species such as hussar were thus compared with both species of seaperch, despite little similarity. Opportunities for saddletail and crimson seaperch in this market are consequently restricted by competition with the local species, which are landed at a much lower cost.

Saddletail and crimson seaperch are also disadvantaged by the availability of local species as either live or fresh product. While the market continues to demand this form of product, the opportunities for exporting frozen whole or filleted product is greatly reduced. However, as stated earlier in this report, small niche market opportunities do exist for frozen product. In fact, it was noted during one interview that frozen seaperch fillets imported from India had recently commenced. Despite the significance of this, the overall market opportunities for saddletail and crimson seaperch in Hong Kong appear poor.

Sea Mullet (Mugil cephalus)

This species was recognised by most of the seafood operators interviewed. In Singapore it was identified as sufficiently similar to be a substitute for the local grey mullet. In Japan, however, it was regarded as a low value, smelly, 'muddy' species restricted to use as fishmeal. It is one of the oiliest fish available, but emphasis on the name 'sea' mullet did not reduce historical perceptions of it as a mud tasting river species. Considerable marketing efforts would be needed to combat this perception. In both Singapore and Japan, mullet is considered a low value fish. (Japanese claims that their own sea caught mullet retained a muddy taste could indicate they are targeting juveniles that have just migrated from the estuaries and have not been exposed to the cleansing effects of the open sea for more than a few days.)

In southern China, a large number of mullet farms supply live markets throughout the region at a low price. However, the Chinese showed keen interest in frozen Australian mullet because they were harvested at sea and did not have the muddy taste associated with Chinese farmed mullet. One client in Beijing was interested in smoked mullet fillets after tasting some samples during an Australian visit, and was impressed by its rich Omega-3 content. Samples were sent to several restaurants in Beijing but feedback from patrons was mixed. More refinement in the product flavour will be required, as well as a structured, long term marketing strategy to overcome some local concerns about the possible carcinogenic nature of some smoked products.

The prospects of exporting sea mullet to Hong Kong appear minimal, primarily due to the large volume of farmed mullet currently available in the market. Trucked in as either whole or fresh product, this is mainly sold in Hong Kong's wet markets. It is estimated that approximately 15 tonnes of this farmed mullet are sold each week, with an average retail price of approximately A\$2 per kilogram.

As a result of such large domestic supplies in all four markets, there was no great interest in Australian sea mullet among those interviewed. It is evident that Australia suppliers cannot compete based on price or freshness. The cleaner taste of the Australian stock may not be enough to defeat market barriers without a concerted and sustained marketing strategy.

Silver Warehou (Seriolella punctata)

Warehou is another species of fairly high oil content. The blue warehou is supplied frozen and shouldered from New Zealand and is quite well known in Japan, where buyers showed a distinct preference for it. Silver warehou would retail for less than the ¥300 – ¥400 per kilogram (A\$3.75 – A\$5.00) that blue warehou commands. Consequently, the species cannot be considered a viable export without substantial research and marketing. The Japanese preference for blue warehou may be related to shape or oil content, or it could simply be that the New Zealand suppliers were prepared to offer a cheaper product. However, the recent collapse of the New Zealand blue warehou industry, resulting from the dramatic decline in returns from the Japanese market, may present opportunities for an Australian substitute now that Asian economies are recovering. Whether the silver warehou or another species can best match the desirable qualities of the blue warehou needs to be tested.

The fish is currently unknown in Chinese markets, and no market interest was identified for this species. The demand for silver warehou in Hong Kong and Singapore seems extremely poor, with no interest in the species expressed by any of those interviewed during the market visit. Time constraints prohibited efforts to discover the reasons for this lack of interest in all four markets.

Opportunities for other species.

During in-country research into the four target markets, opportunities that presented themselves were used to acquire information concerning under utilised species that were not incorporated in the initial priority list. As a result, further species that appear to have some market potential include the following:

- Banded toadfish – (formerly *Spheroides pleurostictus* now *Marilyna pleurosticta*) live and chilled as a substitute for the local Japanese variety of *fugu* or toadfish.
- Cuttlefish – Osaka is the best market for medium to large sized live or fresh product. There is also a market for scored frozen pieces as a food ingredient.
- Flathead – whole, fresh chilled in Osaka during the winter when it is used as a hot pot ingredient. This species is caught locally and some is imported from China.
- Flounder – particularly live wild caught product, though farmed flounder was also high priced. Live product is used for *sashimi* and whole fish were grilled or barbecued.
- Garfish – this was in demand in all three Japanese cities visited, and is used mainly for *sashimi*. Wholesalers in the Tsukiji fish market asked whether there were more suppliers of garfish. Like ribbonfish (refer below), garfish requires careful handling to preserve its appearance in order to realise its potential ¥3000 per kilogram (A\$37.50).
- *Katsuobushi* made from northern blue fin tuna (long tailed tuna) presents a possibility with its use increasing as part of changing eating habits. Large size skipjack tuna with very low oil content is used to make the top quality *katsuobushi*, and northern blue fin tuna would meet the necessary specifications. In this instance, an opportunity in the Gulf of Carpentaria may exist if tuna following the prawns is harvested at the end of the prawn season and snap frozen on board for the cost of around A\$1 per kilogram.
- Moreton Bay bugs – in Osaka, one trader said that the price of live bugs could eventually equal that of live lobsters, although he estimated that it would take several years of marketing and promotion among both importers and consumers.
- Octopus – sold live or very fresh for Tokyo. Octopus is eaten throughout Japan with peak demand in winter for making ‘Octopus balls’.
- Ribbon fish – the large variety caught in southern waters was very popular and high priced, particularly if line caught. If its silver scales are all intact, ribbonfish is used for top quality *sashimi*. Otherwise it is cut into portions for grilling. Unmarked specimens fetch as much as ¥3000 per kilogram (A\$37.50), but would require significant changes in Australian catching and handling techniques would be required so as to preserve the unmarked appearance.
- Whiting, blue swimmer crabs, soft-shell crabs and fresh chilled yellow tailed kingfish were also popular species in Japan.

8. Benefits

- Enhanced industry ability to financially benefit from greater utilisation of current resources and development of new products from previously under utilised or under valued species.
- Renewed industry interest in Asian market opportunities and enhanced profile of Australian seafood in Asia, including national and international media coverage.
- A major presence in China established at the China Fisheries and Seafood Expo, leading to a successful delegation of exporters to China co-exhibiting with Supermarkets to Asia under the Quality Food Australia banner.
- Sales of under utilised species achieved and new trade links forged.
- Close links with SeaQual Australia and HIASM involvement in establishing Asian market requirements as part of SeaQual Australia's quality certification for the seafood industry.
- Development of industry interest in a range of new products including *katsuobushi* (taken up by CFT), *karasumi* and several others.
- Production of five publications providing valuable commercial insight into the targeted Asian markets.
- A national project focus, despite being based in Queensland, with the above benefits evenly spread across all States and the Northern Territory.

9. Further Development

Albacore

No market potential was identified for this species. Increasing pressure on world fisheries and a reduction of the current glut of supply could raise the demand and value for albacore. Canned food is considered to be of lower standard than most other forms of preservation in Asia. Research into a complete snack or convenience meal incorporating tuna in a packaged form may offer a niche market for the species.

Australian Salmon

A very significant hurdle for this species is the association of its name with that of Atlantic salmon. Another difficulty is the dark flesh. Its properties and flavour make it a potentially valuable smoked product, but it requires a suitable marketing strategy to overcome consumer prejudice, as well as research on flavouring and packaging. Continued marketing in southern China for reprocessing may also yield returns.

Horseshoe Leatherjacket

There is obvious benefit in finding markets for a species that is currently being caught in large numbers but not utilised. As well as being able to live in cages under jetties for extended periods, the species may be attractive enough to present opportunities in the highly lucrative aquarium industry. Little is known about this species, so basic research into its characteristics, including liver size and numbers are required.

Morwong

While cheaper stock is still available on the Japanese market, the economic recovery provides a potential opportunity for Australia to substitute morwong previously sourced from New Zealand where the morwong industry declined due to the recent Japanese recession. Further research into the development of pre-packed fillets for convenient home cooking may provide further opportunities for this product in Japan. Targeted marketing strategies would also be required to overcome China's unfamiliarity with the species, inappropriate comparisons with sea bream in the Hong Kong market, and Singapore's reluctance to import this fish due to financial failures incurred by earlier attempts to introduce it.

Ocean Jacket

With good, cheap supplies available throughout Asia, any market advantage would have to be gained through significantly superior quality fish, or highly innovative product development supported by a strong promotional campaign. For example, convenience meals able to be prepared with hot water or a microwave could achieve commercial results by targeting the office or school lunch box sectors in all the major Asian markets.

Queenfish

A similar species is available in northern Chinese waters, but little is known about its market size, and seasonal advantages may provide Australia with commercial opportunities. A comparison between queenfish and its northern cousin would be needed, as well as in-depth research into the characteristics of the flesh, oil content, optimum handling and preparation techniques suitable for the Japanese markets.

Rabbitfish

A ready market for rabbitfish exists in Singapore, the only concerns being reliability of supply and the brevity of the window of opportunity. Establishing a viable market beyond the four week period of the Chinese New Year will pose challenges in view of cheaper local varieties.

Saddletail Seaperch and Crimson Seaperch

Cheap quality supplies from Indonesia seem to have stifled potential interest in the Australian product. Development of a value added processed product appears to be the means to get around the dominance of Indonesian suppliers providing larger fresh and frozen product. Reprocessing for the USA market in China may be another option, but again the raw ingredients can be purchased cheaper elsewhere. A product designed specifically for the Asian market could be the best approach.

Sea Mullet

There is potential to increase the market for sea mullet through a smoked product, thereby increasing returns. Some interest has been generated in China, but further refinement of the product flavour is required, along with exploring the full extent of its market potential for both oriental and occidental tastes. For example, the substantial expatriate and European tourist sector represents a potential market to be assessed.

Silver Warehou

The project identified no commercial potential for this product. Further research into the species, particularly in view of the Japanese preference for blue warehou, may reveal market opportunities.

Other Issues

A number of other issues emerged in the course of the *HIASM* project. Further research would be needed to assess the commercial value of these issues.

- Exploring potential of Australian salmon in southern China once buyers have access to foreign exchange purchasing.
- Exploring potential of smoked mullet fillets in vacuum packs for China.
- Analysis of monthly oil content of queenfish and liver size for Japanese market.
- Methods of filleting queenfish without flesh darkening.
- Liver size comparisons of horseshoe leatherjacket for the Japanese market.
- Increasing transport survival times for horseshoe leatherjacket from the current 7 hours survival time to 18 hours transit time for markets in China and Japan.
- Determining extent of marine aquarium industry in Japan and potential for horseshoe leatherjacket as an aquarium species.

Model for Future Commercialisation

Many issues arose in the course of the project, which were of significance to the commercial development of export sales to Asian markets, including supply chains, reliability and commitment to meet customer requirements, lack of knowledge of the Asian markets, reliability and consistency of export product. As a result it was proposed that one of the objectives of the new *Hooking Into Asian Seafood Markets* project would be the development of an 'Export Framework' specifically for the fishing industry.

10. Conclusion

With demand for fish and other seafood continuing to increase, but limited potential for future growth in wild catches, there was an obvious need to improve utilisation of wild catch resources. Compared to neighbouring countries, Australia is considered to have a high proportion of under utilised species. This project was established to focus on the development of commercial markets for selected under utilised and under valued seafood products.

The project identified a number of significant opportunities for the under valued and under utilised species products. HIASM staff facilitated industry commercial sales into four Asian markets. The project enabled the establishment of significant trade links in a number of Asian countries and provided the first national focus for the marketing of under valued and under utilised species.

The project highlighted the importance of matching marketing opportunities to supply capabilities. Consistency and reliability of product supply in meeting customer requirements was a key issue identified in the project. In the developmental area of under valued and under utilised species, marketing skills throughout the supply chain was demonstrated as a significant issue. The development and maintenance of commercial contracts in Asian markets is a critical issue often not adequately addressed.

The Asian markets represent significant market opportunities for Australian under valued and under utilised seafood products. The capturing of market opportunities in Asia requires further improvement in our ability to target niche markets that offer significant commercial potential and an enhanced ability to supply products consistently to meet the requirements of the market.

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12. Staff and Steering Committee.

Project staff

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