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prepared by

Greg Hart, Director, Wild Oceans Pty Ltd

approved by

David Shearer

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Australia



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Abbreviations

TRL	Tropical Rock Lobster
SRL	Southern Rock Lobster
EU	European Union
USA	United States of America
USD	United States Dollars
FOB	Free On Board
CIF	Cost, Insurance and Freight
CFR	Cost and Freight
FDA	Federal Department of Agriculture
MT	Metric Tonne
GVP	Gross Value of Product
STP	Sodium Tri-polyphosphate
AQIS	Australian Quarantine and Inspection Service
SP	Special Preference nations
MFN	Most favoured nation
VAT	Value Added Tax
CT	Consumption Tax

1 Executive summary

As the global demand for lobster products increases, industry experts forecast higher average sales prices will be possible allowing for higher costs of production both for the wild catch and aquaculture sectors.

With wild caught lobster limited by a finite and seasonally variable supply, the opportunities to maximize returns are forecast to continue to be inconsistent. Live products usually provide the best returns, however the inability to match catch and demand peaks seems unlikely to be resolved by nature.

The real opportunity with aquaculture simply lies in the ability to deliver as and when the market requires:

- highest yielding product form
- consistent product sizing
- consistent product pricing
- consistent arrival quality

If the market can meet these requirements, major buyers anticipate:

- higher average pricing
- higher average demand through new market opportunities
- reduction in buyer risks, costs and losses

For frozen product, the overall consensus of buyers and producers is that for smaller aquacultured sizes there is considerable work required to achieve viable pricing. For live product there is much greater confidence in pricing levels however this still needs to be measured against the species and the quality of the delivered product levels.

The consensus of major Chinese buyers of Vietnamese Aquacultured *P. ornatus* was that the production was at best stable or falling. As such all buyers were now noted to be searching for new supply options to enhance their capacity and fill customer demands.

Evolving markets will determine pricing based on product type, supply capacity and opportunity for substitution, however the real message from the markets is that new opportunities are regularly presenting themselves and consumer capacities continue to grow.

The continual increase in prices of live lobsters over recent years might indicate the enormous demands during the peak festive periods; however it is the steady increase in the daily capacity of the markets that provides the industry with a prosperous outlook.

Market for *P. Ornatus*

China's booming economy and expanding middle class, has resulted in the demand and appetite for live *P. ornatus* to explode. Recognized as the traditional local type, *P. ornatus* is the most important lobster species used for celebratory events in Southern China.

With increasing disposable income, consumers are becoming more aware of product branding, quality control and fine cuisine. The bright and fresh colours of the *P. ornatus* stand out vividly as the centrepiece of the banquet. The growing popularity amongst wealthy Chinese continues to drive an insatiable demand.

Even though today live aquacultured Vietnamese origin *P. ornatus* is discounted slightly over wild origins of the same size, the product overall commands a significantly higher average selling level each year, and continues to find market space for as much as can be produced.

Markets for Tropical Species

With the other slower growing and generally smaller species of South East Asia, the commercial opportunities for viable aquaculture are less certain as for the very popular, larger and more robust *P. ornatus*.

Markets for these other smaller slower growing and generally more fragile wild caught lobsters are certainly already well established, readily accessible and thriving across the globe. It should be note however that data presented in this report identifies that markets for these species deliver considerably lower prices for both frozen and live product types.

Of the major tropical species, *P. penicillatus* is considered as the next preferred species by Asian markets, with *P. homarus* and *P. longipes* alongside as buyers consider customer preferences in balance with likely quality out-turns and overall business risks.

Markets for Slipper Lobsters

Slipper lobsters are well known throughout the world and are essentially well favoured in either frozen or live condition. The highest premiums being paid for product produced as live. In most situations, the inconsistency of supply has been the largest inhibitor to further price premiums in either Western or Asian marketplaces. Where consistent volumes of slipper lobsters might be available, distributors and restaurants universally show high levels of enthusiasm.

Specifically in premium live markets such as Taiwan, China and Japan the preference for the stronger and more robust species suggests that further premium pricing opportunities exist. In the Chinese sectors, large consumer groups have been identified as looking for more exotic species with acknowledged high gastronomy attributes.

It is difficult to ascertain the sensitivity of pricing to supply for these species other than to comment that present demand far exceeds supply.

In summary whilst the demand and popularity for *Scyllarides* sp. in the Chinese market suggests that this might be the preferred option for aquaculturists, the market capacity for *Thenus* sp. as a combination of frozen and live production at smaller sizes might indicate the more profitable direction.

2 Introduction

The global supply of wild caught spiny Lobster is estimated to be around 80,000 mt and major buyers are collectively aware that the supply of spiny lobster has reached full capacity. As such, supplies from aquacultured sources are considered as both overwhelmingly positive and essential.

Of that volume, less than 5,000 mt in any one year could be attributed to aquaculture for which *Panulirus Ornatus* makes up the majority of the volume. This is followed by a small percentage of other tropical species such as *Panulirus homarus*.

The successful commercialization of *P. ornatus* aquaculture over other species has been quite remarkable, both in terms of production capability and market acceptance.

This report is intended to provide background and understanding of the dynamics behind the major markets for aquacultured lobster products, specifically the *P. ornatus* and to a lesser extent other like products (other spiny and slipper species).

There will be no attempt in this report to describe the local dynamics / economic factors of each fishery and how the products are eventually brought to the point of export. It should also be noted that production cost controls, appropriate techniques, capacities and best practices at pre-export handling will be essential for the successful growth and penetration of aquaculture markets.

Additionally, considerations of long term financial and physical capacities, as well as risk management strategies should also be closely considered in future research.

3 Supply of Tropical Rock Lobster (*P. Ornatus*)

3.1 General Background of Major Sources

At present *P. ornatus* is found naturally in a vast range of geographic locations and in varying densities. Regardless of where the product is found, it is part of a valuable commercial fishery with the majority production destined for export sales.

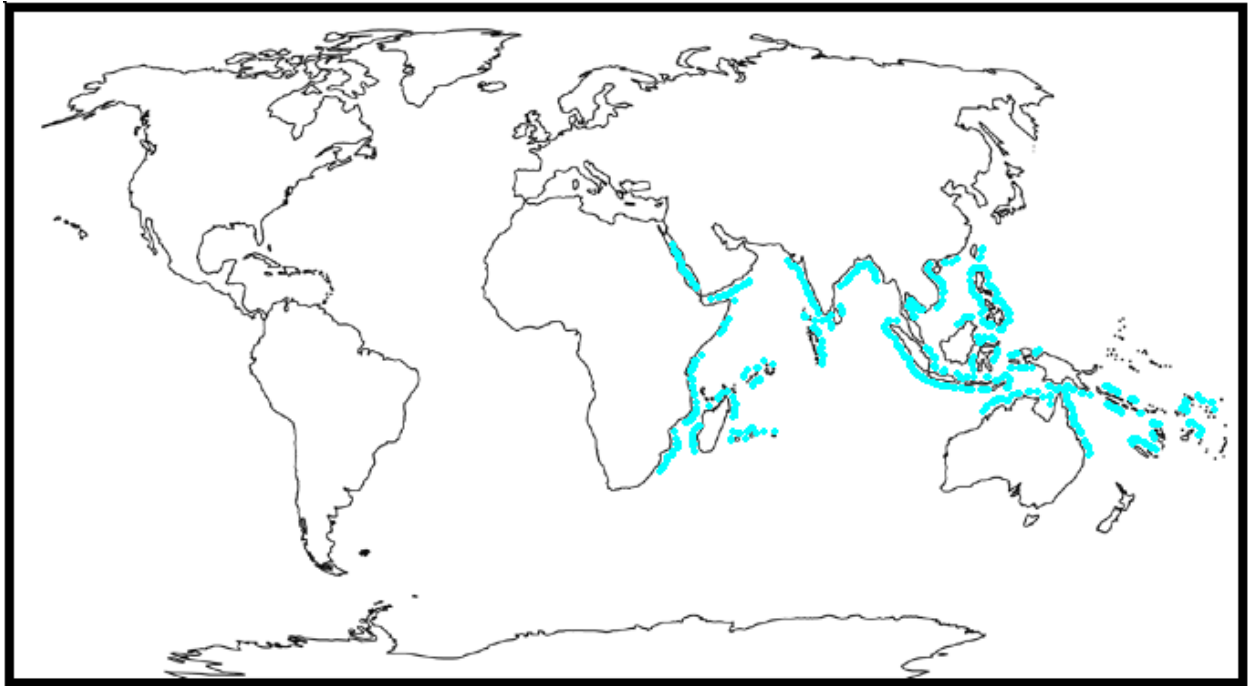
Whether aquacultured from juvenile or sold shortly after its wild adult capture, the majority of this species now finds its way as live to either China or Taiwan.

Examples of acknowledged commercial wild capture sources of *P. ornatus* to China or Taiwan are as follows:

- Australia
- PNG
- Indonesia
- Philippines
- Malaysia
- Thailand
- Burma
- Bangladesh
- India
- Sri Lanka
- Somalia
- Kenya
- Tanzania
- Madagascar



P. ORNATUS



General Distribution of *P. Ornatus*

3.2 Major Suppliers

3.2.1 Vietnam

At present, Vietnam is the largest recognized and commercially viable full scale spiny lobster aquaculture industry.

The aquaculture industry in Vietnam was known to have peaked in 2005 with approximately 4000 mt of aquacultured lobster produced. It is thought that due to the effect of the unregulated collection of juveniles, the number of juveniles being caught is decreasing with each passing season. Today, the production yield is yet to surpass 2500 mt.

It was also noted that in 2006/2007, above normal mortality and disease rates were experienced in the Vietnamese lobster farming sector. This was largely attributed to a combination of weather conditions and reduced tolerances.

Those buyers, whilst noting past quality issues with Vietnamese aquacultured products, continue to be openly appreciative of the origin's consistency of size and supply over all other matters. This tends to indicate the importance of the species and the supply as a major part of their customer offering.

Even though today live aquacultured Vietnamese origin Tropical Lobster (*P. ornatus*) is discounted slightly over wild origins of the same size, the product overall still commands a significantly higher average selling level year by year and has managed to find market space for as much as it can produce.

During the early stages of aquacultured lobster development in Vietnam, the wild caught industry of North Queensland and the Torres Strait raised concerns regarding the impact on their fisheries. Today, it is apparent that there has been very little negative impact on the wild caught sector with the market now experiencing unprecedented growth in net returns and market demand even during periods of unseasonally high production.

85-95% of all lobster farmed in Vietnam was reported to be produced and exported as live as the highest returning product form. The majority of this product being targeted to Southern China markets with most sizes exported being between 600 g and 1.5 kg.

5-15% of all lobster farmed in Vietnam was reported to be produced to whole raw frozen or frozen raw tails. These are the lowest returning product forms, produced either upon live quality grading or during times of large scale mortality or production stress. Frozen products were being both consumed domestically and exported, with the majority of tailed product being sold in markets such as Japan, Korea or USA. Tail sizes ranged from 2 oz to 30 oz with the majority evenly spread from 10 oz to 20 oz.

The general consensus of major Chinese buyers of Vietnamese aquacultured lobster was that the production was at best stable or falling.

- Production is generally available all year round, with exporters moving stocks in a steady fashion so as not to oversupply.
- April sees the market for *P. ornatus* generally at its lowest demand and price point, so very little product is usually exported.
- August and September production is often the highest as farms work to reduce cage densities in advance of the rainy season.

3.2.2 Indonesia

The Indonesian lobster fishery incorporates a wide variety of spiny and slipper lobster species, with *P. ornatus* being only a minor percentage.

The fishery is largely unregulated, with lobster of all types, sizes and conditions being caught. In fact it is not uncommon for 50% of a fishermen's catch to contain berried females. This catch can also include lobsters from as small as 20g.

Although by far, the main product focus out of Indonesia is for exports of live, the main species caught in Indonesia is *P. homarus* and *P. penicillatus*. These species are much less robust than *P. ornatus* are still often required to be sent to frozen production, much of which is exported to Japan as either Whole Raw or Whole Cooked, or sold into domestic tourist markets such as Bali. These species are well regarded by the Japanese market for their good colour after cooking and quite often used in Osechi preparations (end of year gifts).

Recently, a number of Indonesian processors have invested in frozen value adding options to take advantage of these weaker conditioned lobsters for which the majority are directed to Japanese markets.

Although Indonesia exports live product into Taiwan, the target market is Southern China where generally higher prices and capacities for a greater mix of species and sizes exists.

There is no regulated season for the catch of lobster products in Indonesia, nor is there any enforcement of minimum sizing or other restrictions.

- Catches in Indonesia can vary dramatically from season to season.
- Although lobster is caught October through to March/April and it is believed to be more associated with the continuing rains. Product is generally caught throughout the Indonesian archipelago and consolidated into major hubs with access to International airports.

3.2.3 Northern Australia / Papua New Guinea

Northern Australia and PNG produce per year cumulative average exceeding 1000 mt (whole weight) of *P. ornatus* and is the 2nd largest producing area of this species after Vietnam.

Due to current Australian Quarantine Inspection Service (AQIS) restrictions, Papua New Guinea is not able to send live lobster into Australia for transit re-tanking. These restrictions directly affect their ability to access the premiums available from the live markets of Asia. Instead PNG focuses on production of frozen tails which are either

packed and exported directly to the US or sent to Australia for re-packing and consolidation to the USA. This is completed under AQIS controls and attracts generally price premiums. A small proportion of frozen products are retained in Australia for domestic consumption however being a majority whole frozen consuming nation, the opportunity for growth in tail sales is limited.

After having traditionally focused 95% of its production as frozen tails to the USA, 10 years ago Australia entered the live market for *P. ornatus*. The fishery is now separated into 2 areas - the Torres Straight region and East Coast.

The Torres Straight region is mainly licensed by indigenous / traditional fishers who still focus predominantly on frozen tail production whereas, the East Coast commercial fishers target majority production to Live. They have specially equipped fishing and transport vessels allowing them to maximize live holding capacity.

The main catching period is from May to August, with regulated seasons as follows;

PNG	All Diver Hand Caught
Free	Diving: All Year
	Hookah Diving: March - November
	Minimum 115 mm Tail length / approx 450 gm Lobster
	Note: 2008 catches estimated down by 50% on 2007
Australia	All Diver Hand Caught
	Free Diving: 1st December to end January (only for indigenous)
	Hookah Diving: February - September
	Minimum 115 mm Tail length / approx 450 gm Lobster
	Note: 2008 catches estimated down by 50% on 2007

3.3 Common Production Forms

Other than live, there a wide variety of commercial production types for *P. ornatus*. These production types are common across all other spiny lobster species.

It is suggested that the live form provides the exporter with the greatest net return however there are various reasons for why frozen production would be considered.

The most well known frozen forms are noted below. These which include both commodity types and value added varieties:

Commodity Type

Frozen	Raw	Lobster Tails
	Whole	Raw
	Whole	Cooked

Value Added Type

Frozen	Lobster Tails (full, split, medallions – Cooked and Raw)
	Whole Raw (Sashimi Grade, special frozen, treated)
	Whole cooked (blanched and fully cooked)
	Split Raw (cleaned and uncleaned)
	Split Cooked (cleaned and uncleaned)

Byproduct

Frozen	Lobster Sauce / Paste
Raw	Heads

3.4 Major Live Lobster Competitors (Non *P Ornatus* fisheries)**3.4.1 Major non SE Asian Competitors**

Outside of Africa, Asia and Oceania the largest supply of competing warm water lobster products come from the Caribbean and SE America with more than 30,000 mt of *P. argus* produced annually. The vast majority is produced to Lobster tails for the USA and European markets, with producers such as Cuba and Florida being the only 2 countries presently capable of producing significant Whole Frozen products. To date, the successful commercial production of live *P. argus* has been limited however as this species is relatively fast and large growing, there is a possibility that this product at some stage will impact on Asian Live markets. The whole raw product as a live substitute is already increasing in market acceptance.

3.4.2 Other Major Competitors

Competition for available market and tank space is crucial to consider when investigating potentials for volume growth and successful market access of lobster aquaculture products. The two major warm water species presently occupying significant competitor market positions in China and Taiwan are Mexican (*P. interruptus*) and West Australian (*P. cygnus*) species.

3.4.2.1 Mexico

Now at full capacity for live production, the success of this species as live was primarily developed through the assistance of Taiwanese buyers. Accordingly the majority of production from Mexico is sold into Taiwan each year. Over recent years, major buyers in Taiwan have moved to make advance payments to packers pre-season for contracted volumes. Additionally a number of these Taiwanese buyers have set up strategic operations to purchase large volumes in the early months of the season at lower prices, whilst holding and fattening (in Taiwan) ready for the surge in demand pre-CNY. Mortality results tend to vary from season to season but generally will average nearer the 5% acceptable level. Production commences mid September and runs through to February each year with the vast majority being exported Live from October-December.

At the end of 2007, prices ranged around US\$30-35/kg CFR Taipei for average sizes of 400-600 g. This species is considered as an excellent eating species and with it's red shell presents well. Tank holding and transport mortalities limit holding potentials and do limit additional distribution options. The risks of further distance to Hong Kong and China being so far prohibitive in majority re-direction away from the closer Taiwan market regardless of higher pricing capacities.

3.4.2.2 Western Australia

With an average annual production of around 10,000 mt, West Australia exports approx 25-30% live lobster each year into the Asian markets of Hong Kong/China, Taiwan and Japan. The majority catch from Western Australia is between 400 and 600g and has significant opportunity to increase for live production. This will be subject predominantly to available demand and to a lesser degree factory production capacity and air-space availability. Although an excellent eating and presenting species with more consistent arrival conditions than Mexican products, the *P. Cygnus* species is not well regarded by buyers and distributors for long term storage. As such this species is generally sought after only as and when required (with perhaps no more than 7-10 days advance needs).

The season for West Australian Lobsters runs from November to June each year with large catching peaks in December and again in March/April. Products are generally available for Live sales throughout the entire season with pricing structures generally considered against the next best frozen option being 70-75% of the total industry production (25-30% as Frozen Tails, 40-50% as Frozen Whole).

Western Australian Lobster is the largest competitor to live *P. ornatus* in both the Chinese and Taiwanese markets for the smaller size range of 400-600g. It is generally available during the catching season in live quantities that exceed market capacity. In the larger size category, the more fragile *P. cygnus* is much less favoured by the market due its high holding risks.

Although considered by many as a cold water species, *P. cygnus* may be tanked at the same temperature as *P. ornatus*.

In general, the approximate minimum sales level required for selling live *P. cygnus* into China can be calculated as:

Under 600g Calculation

Frozen Whole Cooked /kg

+ Additional Freight and Production costs (approx US\$5.00/kg)

= US\$ per kg CFR HK

Above 600g Calculation

Frozen Raw Tail Price /kg x 40% production weight loss

+ Additional Freight and Production costs (approx US\$5.00/kg)

= US\$ per kg CFR HK

In 2008, Whole Frozen prices for 400-600g ranged approx US\$26-30/kg CFR, whilst frozen Raw Tail prices ranged US\$29-34/lb CFR.

4 Markets of Tropical Rock Lobster (*P. Ornatus*)

4.1 Common Market Considerations

Considerations that impact on the producer's decision to make frozen or live production include:

Sales Value	Maximum Sales Value of the product as Live or Frozen
Less	Cost of production and delivery
Based on	Product Specification (Size and Quality)
	Market capacity and conditions
	Delivery capacity and conditions
	Commercial risk (business terms)

As lobster is generally a celebratory menu item, the market requirements are continuously reacting and evolving, with the changing economic prosperity.

Participants throughout the supply chain from fishermen / exporter through to importer / distributor / restaurant are continuously planning the maximization of their tank and financial capacities this includes:

The heavy loading up of tanks prior to peak demand periods as well as the running down of tank stocks in the lower demand periods and/or higher production periods.

Higher demanded or more speculative species (such as *P ornatus*) generally find greater percentage tank allocations over other species and often to the exclusion of the lesser demand species during peak demand times (due to greater capacity for profit).

Higher quality risk products are generally less likely to obtain market premiums through demand speculation. Acknowledged mortality risks vary from destination, producer, exporter, size and time of year. Other factors adding additional risk could include changes to flight schedules, handling practices, external temperatures, modes of transport, length of transit, likelihood of cancellations and quarantine matters.

Transit and re-tanking mortalities are also important considerations for the supply chain and impact significantly in the purchase making decisions. An interesting comparison can be made between *P. ornatus* and *P. cygnus* (western rock lobster) where the markets have developed an increasing awareness of the difficulty (risk) in holding or transporting larger sized *P. cygnus*. Generally, markets will prefer not take this species in the larger sizes unless considerable discounts are given. Both species are considered excellent for Sashimi and Chinese style cooking.

Different menu's or market segments require different specifications that are much less controllable from the wild capture sector. The availability of alternate lobster specie options is continuously impacting on the daily market pricing. Abnormal spikes and troughs or changes in traditional size ratios etc can have significant impacts on another fishery, as can the changing market preferences.

Changing weather conditions may also impact on the harvest quality or quantity during peak demand periods. This can have major ripple effects throughout the various fisheries. It is here where aquaculture provides a greater certainty for the market that a growing consumer base is placing a larger percentage of their loyalty. Accordingly market space is being reserved well ahead of delivery.

4.2 Major Markets for live *P. Ornatus*

4.2.1 Chinese/Hong Kong Market

With China's steady progress as a world economic power, the live market demand and appetite for spiny lobster has exploded, more-so over the last five years. All sized lobster from 50 g to 2.5 kg+ are delivered daily to the Chinese market with sourcing now from a much wider variety of countries spanning from South East Asia to Madagascar and South Africa. Recent demand has seen more requests for frozen lobster to Northern Chinese cities, with both Beijing and Shanghai now regularly purchasing containers of foreign whole raw lobster. Of which some are being delivered from as far away as the Caribbean.

Almost 100% of lobster consumption is concentrated in the more prosperous eastern provinces of China where average per capita income is more than 4 times that of the western provinces.

With China's booming economy, the percentage of middle class Chinese is increasing along with the growth in number of double income families. More emphasis is being shown to special occasions as a time to reward for hard work.

P. ornatus is the most used Lobster for celebratory events where the bright colours stand out as the centrepiece of the banquet. Restaurants are also seeing an increase in customers from sectors not previously seen.

Growing brand and product awareness, and the interest for quality and exotic cuisine is seeing higher percentages of disposable incomes being devoted luxury items. The forthcoming 2008 Beijing Olympic Games and the World Expo in Shanghai in 2010 are set to provide further stimulus for the display and celebration of China's economic prosperity by the people.

The bird flu scare in early 2000's and the recent publicity of perceived poor aquaculture practices in the southern Chinese prawn farms, many Chinese consumers are now willing to pay higher prices for live and fresh products.

There is a distinct trend for fresher, safer food resulting in the development of better frozen food Cold Chains and more smaller / niche chiller holding facilities. These are particularly noted in the North Eastern regions.

Prices for live lobster have increased substantially. Frozen lobsters are now increasing in demand, usually as a substitute during peak demand periods.

Although live lobster is being substituted with frozen raw lobster in increasing volumes, other seafood products such as crabs and larger shrimp are also becoming viable substitutes during peak pricing periods.

With the increase in average dining experiences, educated consumers continue to look for more exotic options. Once uncommon, now varieties of slipper lobsters, spanner and dungenous crabs are regular market species. In addition, the popular American Homard lobster of the west, once considered unlucky by traditional Chinese, is also starting to develop a steady following.

Apart from premium pricing, perhaps the most acknowledged attribute of the Chinese market is its ability to buy a wide range of sizes and species, usually consolidated by exporters and re-directed by importer receivers.

The largest regional markets might be considered in the following way:

Beijing	800g – 1.5kg
Shanghai	500g – 1.5kg
Guangzhou	ALL Sizes
Hong Kong	1kg+

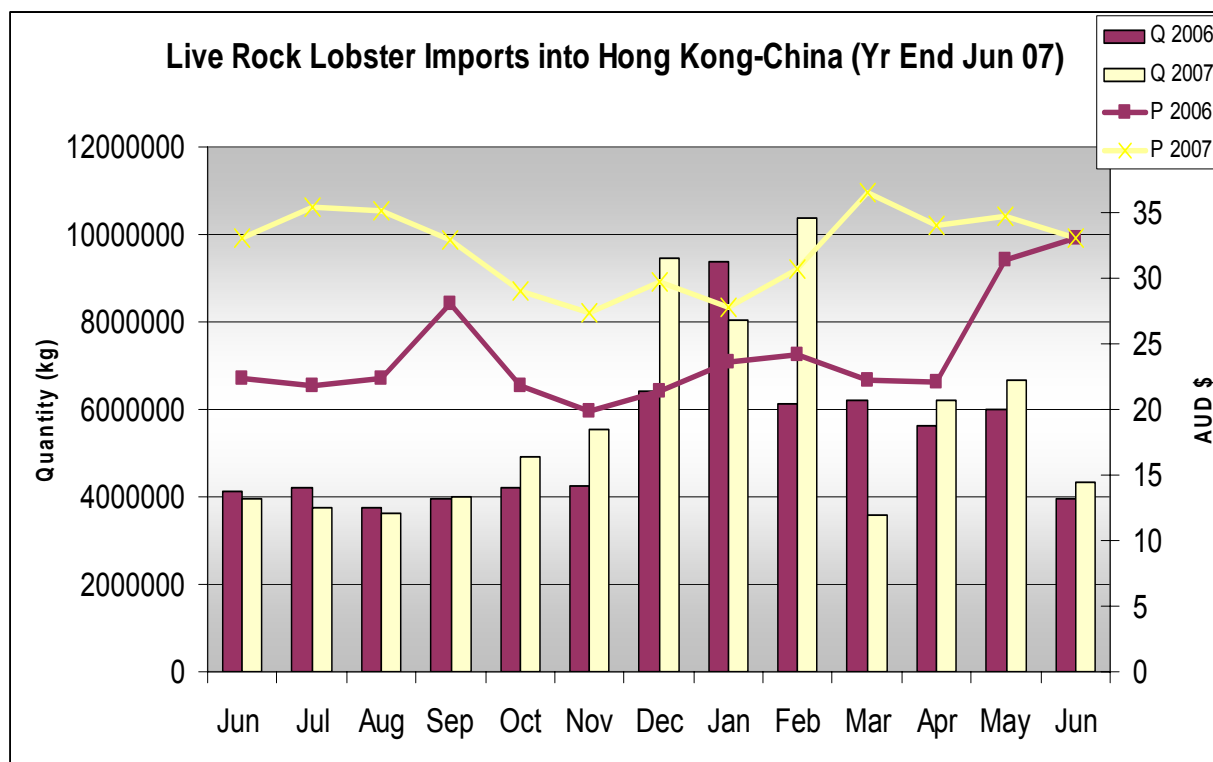
Classic Menu for Live *P. ornatus* Lobster

1st stage RAW presentation – Sashimi consumption on ice showcasing beautiful colours

2nd stage Classic Chinese Cooking Style

3rd stage Lobster Soup / Congee

Other styles for smaller lobsters, half split, chopped, steamed, boiled with mayonnaise



Indicative prices for live lobster shipments arriving into Hong Kong 18th June 2008 are noted as below for simple comparison;

Western Rock (<i>P. Cygnus</i>)		Tropical (<i>P. ornatus</i>)		Southern Rock (<i>J. Edwardsii</i>)	
A (380/460)	US\$36.00	800-1kg	US\$47.00	A (400/600)	US\$46.00
B (460/570)	US\$38.00	1-1.5kg	US\$53.50	B (600/800)	US\$50.00
CD (570/840)	US\$41.00	1.5-2kg	US\$48.50	C (800/1kg)	US\$54.00
EF (840/1140)	US\$45.00	2-2.5kg	US\$43.50	D (1-1.5kg)	US\$54.00
		2.5kg+	US\$39.50		

The outlook for China is rapidly increasing market capacity, still predominantly focused on live supply but improving for frozen options. The major buyer of Vietnamese Aquaculture Lobster Product (estimated at 90 %+).

4.2.2 Taiwanese Market

Although Taiwan and China share some similar preferences over lobster species requirements, during the past decade Taiwan has become less and less able to compete. The Taiwanese market has grown to a much more sophisticated market enabling significant substitution and consumption of cheaper frozen lobster products often processed during wild peak catching periods.

With Taiwan facing challenging economic times, 'value for money' over 'traditional needs' has seen the steady decline in both Live and Frozen Lobster consumption.

Such issues of competition with China and decreased demand has also forced the consolidation of facilities where restaurants and wholesalers once had both cold and warm water tanks for the various specie types, have now just a standard warm water tank.

The outlook for live *P. ornatus* sales into Taiwan is not overly promising. Very few restaurants are willing to match such high prices as China and in general do not utilize such larger average sizes anyway. With smaller sized live lobster, the issues rest with both price and quality (capacity for mortality during tank holding). Recent discussions with buyers noted present preferred suppliers for small *P. ornatus* as India and Sri-Lanka.

Generally in Taiwan today and after more than a decade of increasing economic pressures, the vast population has become much less ostentatious, preferring to derive more satisfaction from obtaining better value for money.

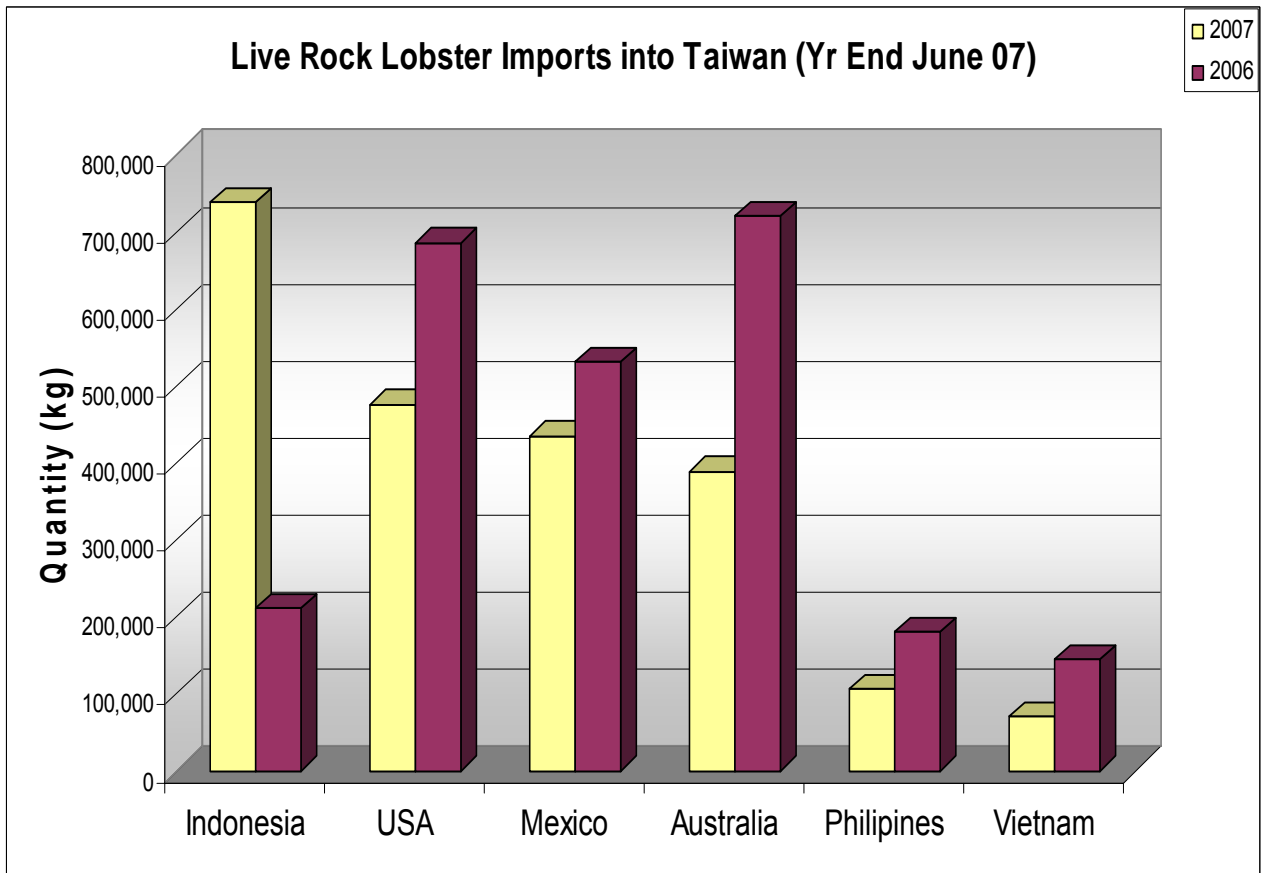
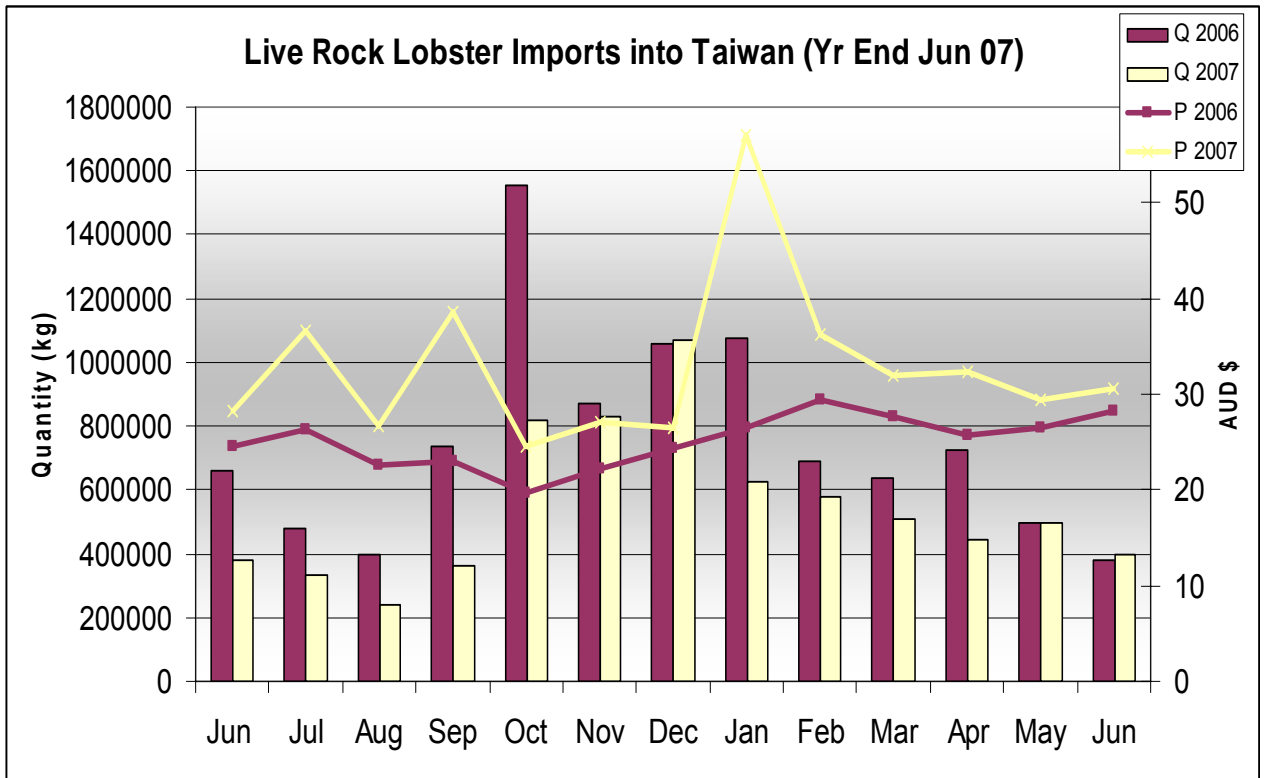
When interviewed, most importers of live products forecast a continued retraction in live demand citing increased substitution for cheaper or alternative products.

With the large volumes of small and medium frozen raw lobster products are available from throughout the world and with greater pressure on US markets the availability of frozen raw products it not expected to decrease.

4.2.3 Lucky days

Consumption of lobster in Taiwan and parts of China is often impacted heavily by the occurrence of 'Lucky Days'. Most exporters will know this well and will often plan sales and deliveries around these dates. These very lucky and favourable days in a Chinese year change constantly and are determined by a complex calculation of the days when the orbit of the revolution of the Earth around the Sun projects on the Celestial Globe. These days are positive days for successful achievements of either large events or small daily life changes. This could mean anything from a haircut to building a house, buying a car or a businessman signing a contract. In terms of celebrations, these dates are the essential rules for making arrangements in many cases.

The short term outlook for Taiwan is falling demand and price destabilization for both frozen and live.



4.3 Major Markets for frozen *P. Ornatus*

P. ornatus is still produced in various countries in a frozen form. With live premiums so much greater, the decline in frozen production is set to continue.

Reasons for frozen production generally include;

- Production from weak or dead lobster.
- Miscellaneous production where a low percentage of *P. ornatus* is caught in combination with another species.
- Byproduct from other fishing operations (eg. Prawn trawling)
- Remote fisheries where adequate infrastructure is unavailable or transit arrangements are too unreliable.
 - With opportunities for premium prices, investment into specific infrastructure such as specialized catcher vessels, tanking facilities is becoming an accepted request.

It should also be noted that with the recent increases in fuel costs, these most remote fisheries may revert back to a greater frozen production as the cost advantage diminishes.

P. ornatus can be found imported in smaller sizes as whole frozen to markets such Japan, China, HK, Taiwan, Korea, UAE, Europe and Australia, however the majority frozen product type for this species is Raw Frozen Tails which is currently exported to the USA market.

With increasing price premiums being paid by various markets for Whole Frozen, it is predicted that targeted tail production for this species will continue to decline

4.3.1 USA

Whilst the US market is presently undergoing a difficult economic period, it is still by far the largest consumer of lobster products.

The largest producer of *P. ornatus* raw lobster tails is the Torres Strait region made up of production from both Northern Australia and PNG. Until 12 years ago, 99% of *P. ornatus* production from this region was processed as frozen raw tails.

Over the past 10 years, US buyers have begun to publicly recognize the stable quality of North Australian Lobster tails with premiums of 2-4 USD per pound being paid over the same size of Caribbean products (the largest spiny lobster supply source for USA).

Being a generally large lobster species, in a market of predominantly smaller sizes, *P. ornatus* has few warm water specie competitors above 12oz in the US market. This provides the opportunity to fill premium niches especially when credited with having a very high quality out-turn rate.

Such niche's that demand a high incidence of quality include:

- Premium steakhouse menu's
- Casino / high-roller takeaways
- Wealth Management gift sets
- Internet gift packs and home deliveries
- Bulk Wholesaler publicity specials

The positive out-turn of product is especially important where products are being sold to the consumer in the raw state (where chef's do not have opportunity to separate out the lower quality pieces that are often only evident after thawing or cooking.)

Other perceived benefits of products from Papua New Guinea and North Australia include:

- non use of additives such as STP or Sulphites
- the perception of 100% net weights / no glazing

Within the past 12 months the US market had introduced frozen *P. ornatus* tails from Vietnam. This has been at much lower levels and the North Australian species have found resistance, although this might be argued as a combination affect along with the decline in the US economy. The Vietnamese production has increased with the reported higher sea cage mortalities and periods of generally weaker lobster.

Traditional users of North Australian origins have noted a recognizable difference in taste, commenting on the lack of sweetness in Vietnamese origins and their reluctance to substitute. In saying this, the comparison in price between origins has pushed many traditional users to re-evaluate their purchase strategies.

Please note below, June 2008 distributor pricing levels for Brazilian (*P. echinatus*, *laevicauda* and *argus* sp.) as well as Vietnamese (*P. ornatus*).

The short term market outlook for the USA is falling and price destabilization for frozen tails. There is no significant live spiny lobster market.

4.3.2 Japanese Market

Whilst Japan may not be a major importer of Live *P. ornatus*, it is without doubt the largest importer for whole frozen tropical lobster products.

The charts below show Japanese imports over the past 2 years. These depict that product is being imported from a wide range of countries. It should be noted that these that *P. ornatus* represents only a very small quantity of its total imports.

The largest frozen exporter from the SE Asian countries into Japan is Indonesia which generally supplies sizes from 100g through to 350g to that market. A typical Indonesian Whole frozen specification might be as follows;

Whole Frozen Lobster

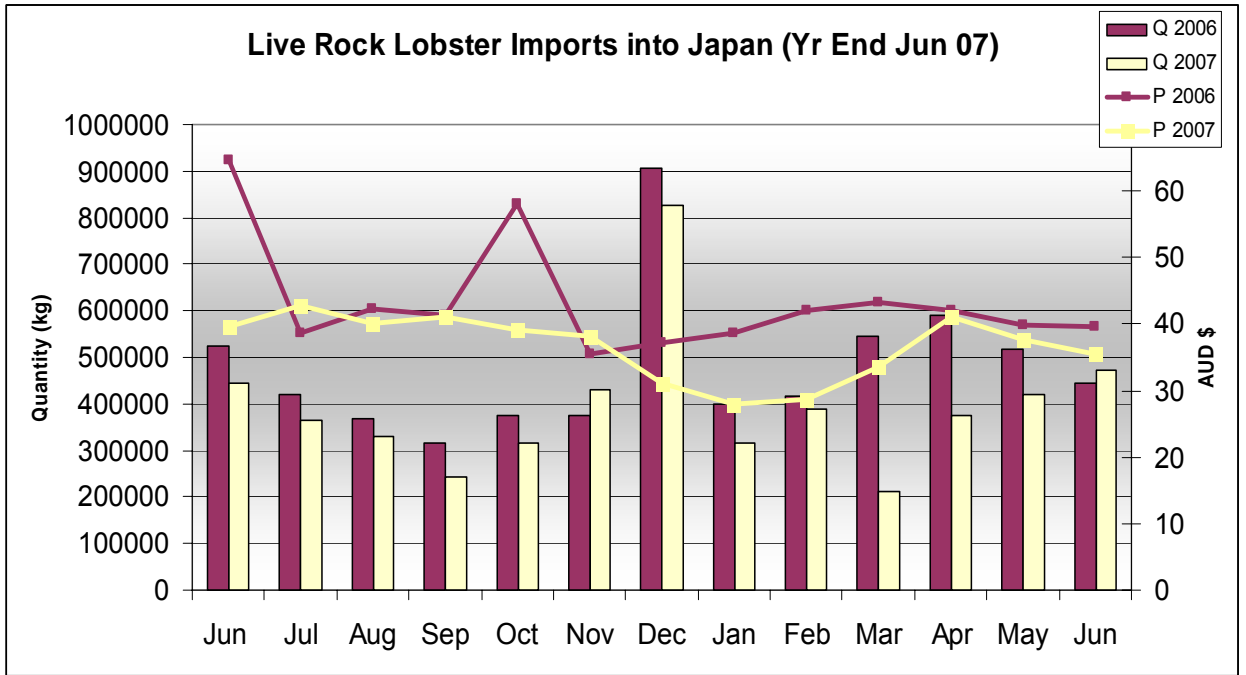
- Individually Wrapped, Packed 10 kg per carton
- Sizes packed
- 80/100g, 100/150g, 150/200g, 200/250g, 250/300g, 300/350g, 350/400g
- Species: Includes majority *P. Homarus* and *P. Penicillatus*, with *P. Longipes* and *P. ornatus* also included.

The less attractive 'Green Lobsters' such as *P. versicolor* and *P. Polyphagus* are usually requested to be sold separately and often at a discount. Due to the general strength and higher value of *ornatus* as Live, very few *P. ornatus* are often included.

Generally the first priority for Indonesian lobster is for sale as live into Chinese markets; however with fluctuating landings, restrictions in airspace, market capacity limits and unsteady mortality / quality conditions, significant volumes of product are destined for frozen production each year with the majority to Japan.

The Japanese regard the species *P. Homarus*, *P. Penicillatus* and *P. Longipes* which generally cook with strong red and darker orange colours as an excellent presentation species with frozen returns for the smaller sizes often exceeding Chinese Live price equivalents.

The short term market outlook for Japan is falling demand and with price destabilization for frozen and live product.



5 Key Constraints

5.1 Technical Market Access Constraints

5.1.1 Payment Systems and Duties - China

Over the past 20 years, the system of pre-payment by direct Telegraphic transfer has dramatically adjusted in favour of the buyers. Payment terms for today's major Chinese lobster buyers are generally unsecured on open terms ranging from 24 hrs to 21 days after shipment arrival with very few payments made in advance.

Officially the RMB is only exchangeable to foreign currencies through arrangements with the State Administration which governs both rates and permission to exchange. In essence the need to pay for imports in foreign currency whether by black market or not is matched with the need for corresponding foreign currency export receipts.

Although not exclusive, most payments today are still made via Hong Kong Banks and not directly from Chinese based banks. Payment instruments such as Letters of Credit are still generally not seen in this environment.

Regardless of Hong Kong's change in status since re-unification in 1997, it remains a free harbour and a separate customs territory from mainland China where lobster products of all types by air or sea attract no duties, tariffs or taxes. Hong Kong's status as a free-trade port is pledged to continue until 2047.

As noted, Chinese mainland importers are bound by law to pay both Custom duties and Import Taxes as scheduled by the central government, however it seems with lobster and alike products, the eventual cost to the importer will vary according to the changing local circumstances and entry point.

The actual rules of enforcement for Chinese import Tariffs & Duties are extremely complex and ever-changing especially when applied to high valued items such as lobster. There are preferential arrangements for products, their specific uses, suppliers, countries of origin and state joint venture arrangements, not to say the least.

Although difficult to verify the level of enforcement of regulations at each entry point, it is understood that the official import tariffs for live lobster range from 0-35%, for which a standard 17% VAT is also applied (same for all items). The rate may then be further varied depending on circumstances for concessions or exemptions, with additional adjustments depending on the agreed minimum declarable invoice value.

With China's entry into the WTO, further reductions in tariffs are set for gradual easing over the coming decade (in many cases to zero).

Most favoured nation (MFN) tariff rates apply to WTO members and nations who have established trade relations with China which are generally much lower than the general rates which apply to non-MFN nations.

Countries then considered as Special Preference nations (SP) have even lower import duty rates still. These include countries and associations that have signed special agreements & also include neighbour countries to facilitate more open systems of trade and border management. Such special preference nations include, but are not limited to ASEAN (Malaysia, Singapore, Thailand, Indonesia, etc.), Hong Kong under the Closer Economic Partnership Arrangement and developing nations such as Cambodia, Myanmar, Laos, and Bangladesh etc.

New Zealand is a recent example of a 1st world country that has SP status with China and is planned to have import tariffs on lobster reduced to zero within 5 years.

However in each specific case, the importer will still obtain its own ruling with China Customs based on the pricing evidence available and proof of the origin of the goods.

According to Chinese Law (Article 55) - The Customs valuation of import and export goods shall be determined by the Customs on the basis of the transaction value of the goods. If the transaction value cannot be ascertained, the Customs valuation shall be determined by the Customs according to law. The Customs valuation of import goods shall include the value of the goods, cost of transport, charges associated with transport of the goods and cost of insurance occurred before the goods are unloaded at the entering point of the territory of the People's Republic of China'

Article 57 - Duty reduction or exemption may be granted to import goods of specific areas, specific enterprises or for specific purposes. The State Council shall define the scope and formulate the rules of such duty reduction or exemption.

Article 58 - Ad hoc duty reduction or exemption not within the scope specified in Article 56 and the first paragraph of Article 57 of this Law shall be decided by the State Council.

Article 62 - Where the Customs finds that the duties are short-levied or not levied on a consignment of import or export goods or on inward or outward articles after the release, the Customs shall collect the money payable from the obligatory duty payer within one year of the previous duty payment or the release of the item. If the short-levied or non-levied duties are attributable to the duty payer's violation of the Customs regulations, the Customs may collect the unpaid amount from him within 3 years.

5.1.2 Official Duties and Taxes for Lobster Imports to China

Essentially, official duties should be calculated as follows;

$$\begin{aligned} \text{Total official import costs} &= \\ &+ \text{CIF Price} \times \text{Import Tariff (0-35\%)} / (\text{usually } 10 - 20\%) \\ &+ \text{CIF Price} \times \text{VAT (17\%)} \\ &= \text{CIF Price} \times 17-50\% \text{ (subject to variation by tariff percent agreement \& authorized} \\ &\text{minimum declarable product value)}. \end{aligned}$$

With more scrutiny from Government officials on the increasing desires of Chinese consumers for luxury goods, otherwise known as "high class" goods, there has been calls for the extension of the luxury targeted 'Consumption Tax' to include products such as live lobster. However as at today this is directed only to such as categories jewellery, cosmetics, cigarettes, alcohol, firecrackers, automotive tires, motorcycles and motor cars, refined oil products, luxury yachts etc with taxes said to be ranging between 3 & 45 percent.

Industry forecasters note that when all import Tariffs are removed in line with WTO commitments, the risk for lobster products to then be subject to both Value Added Tax & Consumption 'Luxury' Tax is considered to be a real possibility. In the meantime those countries with SP or MFN status are well positioned to benefit, especially during times of higher border inspection & duty examination.

5.1.3 Payment Systems and Duties - Taiwan

Similar to Hong Kong and China, Taiwanese importers have also adjusted their Live Lobster payment terms in their favour. Payment terms from major Taiwanese live lobster buyers are also generally unsecured on open terms ranging from 24 hrs to 21 days after shipment arrival, however it is not uncommon for some payments to be made in advance (in lieu of matching the higher prices paid by China). Unlike many of the Chinese live importers, payments are made from Taiwanese buyers direct to suppliers.

For frozen products, terms range from T/T advances, to open terms and/or L/C combinations.

Duty payable into Taiwan is set by government regulation and essentially calculated in one of 2 ways.

1. Accepted Transaction Price => Actual CIF declared invoiced price (usually only accepted if it is the higher of the 2 options).
2. Related Party Transaction Price => this is where the Taiwan Custom Services can disregard the Transaction Price (Invoiced Price) and essentially apply another based on:

The price of other identical goods sold at the same time in the same set of conditions
Best market information otherwise available

Of recent times, the application of duties and research on latest market values has seen greater attention by Customs authorities, as has been the interception at sea of duty evaders / smugglers. The re-focused attention has increased so much for the importation of lobster and like products, which the risks for evasion are now in effect too great to consider.

To better understand the updated Tariff Schedule and additional notes, are available on <http://eweb.customs.gov.tw>.

5.1.4 Official Duties and Taxes for Lobster Imports to Taiwan

Frozen and live Spiny Lobster is considered in the same category.

Import Tax (payable based on CIF price and country of origin). Examples include:

Australia	15.0%
Indonesia	13.5% (discount for 3rd world countries)
India	13.5%
Burma	13.5%
Thailand	13.5%
Vietnam	13.5%
Malaysia	13.5%
PNG	13.5%
Panama	DUTY FREE
Guatemala	DUTY FREE

- Commercial Tax (payable on all lobster products sold) 5%
- There is no Import Tax payable for Live Lobster under 80g as they are considered as seed for aquaculture activities and not for ready retail sale.
- Slipper Lobster is considered under a different code and charged @ 30% x CIF price.

5.1.5 Payment Systems and Duties - Japan

The import of lobster products into Japan is quite straight forward with major importers located around each entry point with holding facilities as needed.

Live Lobster arrivals into Japan tend to be more forward planned on an 'as needed' basis, with product often delivered on the same day direct to end users (direct from International Airports). With fewer requirements for re-tanking, the Japanese live industry is today made up of a greater number of traders.

Daily oversupplies of live products are much less common than 10 years ago. Any additional supply often find it's way to one of the major auction markets, with Tokyo's Tsukiji market playing the largest role.

Major International Airport Entry Points

Tokyo
Osaka
Nagoya
Fukuoka

Major Seaport Entry Points

Tokyo / Yokohama
Nagoya
Osaka / Kobe
Hakata
Naha

5.1.6 Official Duties and Taxes for Lobster Imports to Japan

Frozen/live Spiny Lobster and Frozen Slipper Lobster are considered in the same category.

Import Tax (payable based on country of origin). Examples as follows:

Australia	1% Duty
Indonesia	Free from 1st July 2008
India	1%
Burma	Free
Thailand	Free
Vietnam	1%
Malaysia	Free
PNG	1%

- Consumption Tax (payable on all lobster products sold) - 5%
- Calculation = (CIF Value + Custom Duty) x 5% CT

5.2 Logistics and Supply Chain Management Constraints

5.2.1 Market Entry Points

When duties and taxes are to be paid, the market entry point of lobster can sometimes have a significant bearing on the maximum net returnable value to the exporter. The routes and channels for live and frozen lobster products in some Asian markets are evolving for obvious reasons. Specifically for China and Taiwan, it would seem unlikely that any government collected import statistics would have much bearing on the actual GVP passing the borders.

Without doubt the largest consumers of *P ornatus* are China and Taiwan where the vast majority is imported as live, with the same channels used for a myriad of other tropical spiny lobster and slipper lobster varieties.

Most frozen species might be considered as being impacted the same at each entry point, however with bulk live products the opportunity to pass as locally caught provides some species with privileged opportunities – this is especially the case with *P. ornatus* which is considered the ‘local’ type.

China – Lobster Entry

Since the 1500’s, the opium trade merchants and silk traders have been trading with China through the Canton trade route. Although silk and opium have slowed in trade, live seafood has definitely not. In fact 80 - 90 % of all Chinese Live lobster is imported through the Hong Kong / Shenzhen / Guangzhou (Canton) trade route.

The use of the Hong Kong International Airport (Chek Lap Kok) is still the most common entry point for all live seafood into China, although with recent tariff reductions and special arrangements, more products are entering China directly with increasingly more open disclosures.

With the evasion of tariffs often sort after by an element of Chinese importers, the encouragement or discouragement of such international exchange by the state can be easily flexed at the border without advance notice. This sometimes has significant financial repercussions throughout the supplier / producer / buyer chain that has developed a reliance on such entry practices. These channel halts are sometimes referred to by the market as ‘border closures’. This is when the unofficial channels are closed and only entries with full duties payable are permitted.

Taiwan – Lobster Entry

Although Taiwan still has some access to fishing boat activity delivering locally caught live lobsters, including product from Vietnam and Philippines, the majority of Live lobster is imported directly into Taiwan by air through either Taipei or Kaohsiung. All foreign caught lobster is subject to Taiwanese Government duty charges.

Given the limited opportunities for alternative live import channels and duty evasion, the import channels are fairly straight forward.

Major Live importers are usually based in these two main cities and often have tanking facilities in place at each point. In Taiwan without the opportunity to smuggle live products, a number of distributors have moved to establish large holding facilities to take advantage of price troughs in wild caught fisheries such as West Australia and Mexico etc. With the Vietnamese aquacultured supply there is less advantage and therefore less enthusiasm in such strategies.

5.3 Quality Specification Constraints – Live Lobster

5.3.1 Industry Standards and Claim Settlement Calculations

Live Lobsters might be better described as ‘dying lobsters’, which are to be recovered by the buyer with varying levels of success based on the species, handling methods and transit times.

In each supplier / buyer relationship, there may be a different level of expectation and a modified arrangement for claim calculation. The below claim calculations could be said as examples of industry standards.

Weight Loss Claims

Usually 3% allowance, any further loss is claimed at full value beyond 3% on arrival.

It can be argued that lobsters with longer transit times will have greater weight losses on arrival but will regain weight upon re-tanking.

Mortality Claims

- For wild caught product, there is usually 5% allowance; thereafter 50% of any additional mortality is claimable. For the Vietnamese products, tolerances are set a lower 3%.

Certain species are very hardy such as *J. Edwardsii* and *P. ornatus* where mortality is usually quite obvious upon unpacking making claims calculation relatively easy. Other less hardy species such as *P. longipes*, *P. homarus*, *P. cygnus* and *argus* may take some time to better understand the extent of their capacity to survive upon re-tanking. Mortality results under 5% without the need for claim settlement are the targeted requirements and in general are the industry norms. Claims above 10-15% are usually considered excessive and special resolutions are generally negotiated especially in cases where 50% settlement for dead lobster is still well exceeding the market value for frozen raw lobster. Recently where prices for some species live has been at triple the frozen value, the ability to negotiate amicable claim settlements has become a major business obstacle.

Quality and Non-conformance Claims

- Appendage loss (leg / antennae), damage should be as specified between parties.
- Out of specification claims are often negotiated on a claim by claim basis and will be largely dependant on the relationship between the buyer and the packer.

Notes

- Increased overall live Lobster imports into China also means increased overall volumes of frozen lobster being produced as a result of mortalities. This continues to have a significant impact on both market pricing and acceptance of frozen lobster products.

General processing quality issues which could be observed from only Wild Caught Lobster may include the following points:

- Stresses or mortality due to water/ocean fouling including coral spawning, pollution, changes in sea temperatures, changes in salinity levels.
- Low meat yields or poor shell quality post moult.
- Stresses or mortality due to catching and processing handling techniques.

General processing quality issues which could be observed from only Aquacultured Lobster may include the following points:

- Differing standard of taste – through feed
- Differing flesh characteristics – through feed or handling
- Shell colouring / algae growth
- Tail fan necrosis possible from extended holding
- Different Physiology / Shape
- Shorter Tank Holding Life
- Increased transit mortality

Although generally unnoticed by the consumer, the two most recognizable characteristics which assist in identifying aquacultured lobster in the market by importers and distributors were noted as:

- Enhanced cheek growth
- Notable difference in taste compared to wild caught

6 Conclusion

Very few markets outside of China and Taiwan have been exposed to aquacultured lobster. There is however a general interest shown from the majority of the markets and they are beginning to indicate their openness about future procurements opportunities.

However, aquaculture lobster products are unlikely to achieve price premiums over the same size and colour of wild caught type in the commodity market environment except for where product was made available during low supply.

When considering the global supply of lobsters from all fisheries, the majority consensus is that production has peaked and is likely now in decline or at best stable. This consensus spans across all major lobster buying markets from tropical / warm lobster species through to the cold water types.

Where there may be an increase in the global lobster demand, the opportunity for sale into premium markets is limited by a finite and seasonally variable wild caught supply.

The Chinese market is without question the single most important factor impacting on global lobster consumption and the successful expansion of premium aquaculture live markets.

With recent history from the SARS crisis showing the possible impact magnitudes on both consumer demand and disruptions in transport logistics, such focused exposures should be carefully noted and monitored by risk managers.

In essence, global lobster growth capacity relies disproportionately on the continuing expansion of the Chinese market.

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8 Appendixes

8.1 World Production Estimates for Jasus, Panulirus, Palinurus, and Sagmariasus species only

COMMON SPECIES OF SPINY LOBSTERS			
Significant commercial fishery and estimated catch – for 2006			Estimate Catch MT (000 kgs)
TROPICAL			
Panulirus	Argus	Brazil, Florida, Bahamas, Caribbean, Cuba, Nicaragua	38,000
	gracilus	Ecuador, Panama	400
	homarus	East Africa, Indonesia, Oman, Somalia, Philippines, India	5,000
	laevicauda	Brazil	2,500
	longipes	PNG, Australia, Asia, India, East Africa, Vietnam, Solomon Is	100
	ornatus	PNG, Australia, Asia, India, East Africa, Vietnam (Farmed), Sri Lanka	6,000
	penicillatus	Reunion, Pacific Is, Galapagos, Solomon Is, PNG, Philippines	1,500
	polyphagus	Pakistan, India, Thailand, Southeast Asia	4,000
	versicolor	Indonesia, Asia, East Africa, South Pacific	200
	regious	Mauritania, Western Sahara, Sierra Leone	800
		TOTAL	58,500
SUB-TROPICAL			
Sagmariasus	verreauxi	Eastern Australian, New Zealand	150
Palinurus	charlestoni	Cape Verde Islands	40
	delagoae	South East Africa	50
	mauritanicus	Mauritania, West Africa	200
Panulirus	cygnus	Western Australia	9,000
	inflatus	West Mexico, Guatemala	1,500
	interruptus	California	200
	japonicus	Japan, South China Sea, Taiwan, South Korea	900
	marginatus	Hawaii	
	pascuensis	Easter Island	50
	stimsoni	Hong Kong/China	50
		TOTAL	12,140
TEMPERATE			
Jasus	edwardsii	New Zealand, Southern and South East Australia	7,000
	frontalis	Juan Fernandez Island, Chile	150
	lalandii	South West Africa, Namibia	2,800
	paulensis	St Paul, New Amsterdam Islands	450
	tristani	Tristan de Cunha	500
Palinurus	elephas	UK, France, Spain, Italy, Portugal, Morocco, Mediterranean	1,800
	glichrisi	South Africa	1,000
		TOTAL	13,700
	TOTAL	ALL SPINY (MAJOR COMMERCIAL AREAS)	84,340
		* Significant commercial fishing only	

8.2 Market Comments and General Product Profiles of Other Species

The following commentary provided is a very basic summary of comments received from buyers located in the major markets of China and Taiwan for Live products only and pertains only to the short list of products identified as having a possible SE Asia origin.

Spiny Lobster

P. penicillatus

P. longipes

P. homarus,

P. versicolor,

P. polyphagus

Slipper lobsters

Scyllarides squammosus and *haanii*

Parribacus antarcticus

Thenus orientalis

Ibacus ciliatus and *novemdentatus*

Including combined snapshots on:

1. General market pricing and activity (average May 2008)
2. Current market capacity and growth
3. Other markets
4. Major quality issues / product attributes or comments as raised by markets
5. Current major supply origins



P. HOMARUS

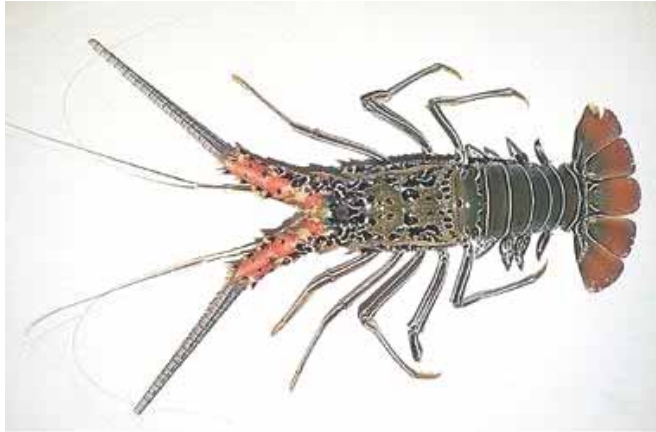
8.2.1 P. Homarus

Chinese Name:	Qinglong (青龙)
Other Names:	Udang, Karang, Pasir, Green, Scalloped Lobster
Basic Description :	Body Greenish to Brownish with obvious bright orange and blue markings between eyestalks. Shell covered with tiny white spots.
Main Markets (Live):	China and Taiwan
Sizing:	60-100g, 100-200g, 200-300g, 300-500g, 500up
Size Preference:	China 100-500g+ (very few sizes available above 350g) Taiwan 350-500g

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 60	60-100	100-200	200-300	300-500	500+
US\$/kg	8.00	16.00	34.00	38.00	36.00	40.00

Re-tanking:	Retanking is average. Tanks relatively well providing handled well prior to shipment
Major Sources:	India/Indonesia/Sri-Lanka/Middle East/Philippines,
General Comments:	Can generally handle lower quality water conditions and as such is a good candidate for aquaculture. Small specimens of this species are very abundant in SE Asia.
Market Outlook and Growth Potential:	The potential market for live P. homarus is quite significant and similar to P. penicillatus, but still less desirable lobster than the higher priced P. ornatus. The species has the ability to handle lower water quality and high growth rates should allow higher production in the marginal areas. Generally, in the market on any one day, P. homarus is priced \$10 - \$15 lower price than P. ornatus, however in times of peak demand it can serve as a suitable replacement for the same sized P. ornatus.



P. VERSICOLOR

8.2.2 P. Versicolor

Chinese Name:	Zalong (什龙)
Other Names:	Bamboo, Barong
Basic Description:	Body generally blue and green, Carapace with a mosaic pattern of green, white and dark blue/black. Body with distinct white and dark blue/black stripes
Main Markets:	Mainly HK (less favoured in China mainland)
Sizing:	60-100g, 100-200g, 200-300g, 300-500g, 500up
Size Preference:	100-500g

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 60	60-100	100-200	200-300	300-500	500+
US\$/kg	8.00	10.00	23.00	23.00	25.00	32.00

Tanking Comments:	Very aggressive nature, not very good for tanking with other species. Arrival mortalities are usually a little higher than <i>Ornatus</i> , but still relatively strong. Usually separated immediately by catchers.
Major Sources:	India, Indonesia, Sri Lanka
General Comments:	Very slow growing species and no large quantities found together.
Market Outlook and Growth Potential:	Limited potential for market growth mainly due to its aggressive nature toward other lobster whilst being tanked. This lobster must be kept at all times in separate tanks to avoid severe mortality losses of the other species. It is reported that the growth rates of <i>versicolor</i> is one of the slowest of all the species. There is a market for the Aquarium trade where the potential for Propagated small juveniles has some merit. Prices can be as low as \$15 differential to <i>ornatus</i> .



P. PENICILLATUS

8.2.3 P. Penicillatus

Chinese Name:	Youlong (油龙), Shitou Long
Other Names:	Pronghorn Spiny Lobster
Basic Description:	Body usually dark blue and brown. Legs with vertical white stripes, tail segments dark blue then brown repeating.
Main Markets:	Mainland China and Taiwan
Sizing:	60-100g, 100-200g, 200-300g 300-500g, 500up (also avail U/60g)
Preferred Sizes:	100-500g+

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 60	60-100	100-200	200-300	300 500	500+
US\$/kg	8.00	10.00	21.00	21.00	25.00	27.00

Tanking Comments:	Average. This species re-tanks similar to <i>P. Homarus</i> provided handled well prior to shipment but needs very clean and highly oxygenated water
Major Sources:	Indonesia, Philippines, India, Burma
General Comments:	Much liked lobster species by all Asian markets for the clean taste and bright shell presentation, however not a favoured lobster for aquaculture due to sensitivity to poor water qualities. There is an abundant of this product in Indonesia and usually makes up the large percentage of frozen production
Market Outlook and Growth Potential:	Due its clean taste and good white flesh, the <i>P. penicillatus</i> is very well regarded in all markets, particularly in Japan and Northern Taiwan. The species is not generally the strongest of lobsters; therefore mortalities are often high during transportation and re-tanking. These high mortality rates impact on the selling price which is usually \$ 5 - \$10 less than <i>P. ornatus</i> (of the same size). If suppliers are able to aquaculture this lobster whilst increasing its travelling strength and re-tanking ability, then the market would be considered to be high and second to <i>P. ornatus</i> .



P. LONGIPES

8.2.4 P. Longipes and Femoristriga

Chinese Name:	Zhulong (朱龙), Zalong
Indonesian Name:	Batick, Longlegged Spiny Lobster, White Whiskered Lobster
Basic Description:	Body generally dark brown, Carapace and body distributed with many whites spots and markings. Both species often confused together.
Main markets:	HK/Shenzhen areas, Taiwan
Sizing:	60-100g, 100-200g, 200-300g, 300-500g, 500up
Size Preference:	100-500g+

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 60	60-100	100-200	200-300	300-500	500+
US\$/kg	8.00	10.00	23.00	23.00	25.00	32.00

Re-tanking:	Difficult for transport and re-tanking, not hardy
Major Sources:	Indonesia, India, Philippines,
Other Markets:	Japan (as frozen)
Comments:	A fairly slow growth rate and does not acclimatize well to new surroundings and tank conditions. Although not a hardy live lobster, this species is well regarded by Japanese as a frozen product with good presentation and eating qualities.
Market Outlook and Growth Potential:	<i>P. longipes</i> has potential to have a strong market presence in the Japanese live market, where its similarity to <i>P. japonicus</i> . There is already a small local presence in the live market and a good strong following in the frozen market. There is good potential for aquaculture if located close to the markets.



P. POLYPHAGUS

8.2.5 P. Polyphagus

Chinese Name:	Shanlong (杉龙), You Long
Other Names:	Pakistan, Mud Lobster
Basic Description:	Body dull green with yellowish white bands on legs and small antennae. Tail has yellowish white bands repeating on each segment. Sometimes confused with <i>P. Versicolor</i> .
Main Market:	China/HK and Taiwan (usually as a mix of species in any shipment)
Sizing:	60-100g, 100-200g, 200-300g, 300-500g, 500up
Size Preference:	100-500g+

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 60	60-100	100-200	200-300	300-500	500+
US\$/kg	N/A	11.00	24.00	24.00 24.00		31.00

Re-tanking:	Very hard for re-tanking, usually high mortality on arrival. This is the most difficult of all tropical species to transport and hold as live.
Major Sources:	Sri Lanka, India, Burma, Malaysia
Other Markets:	Major Whole Frozen markets are Japan, Taiwan, Mid East, Europe
General Comments:	The largest fishery for this species is based in India for where the majority are processed as Whole Frozen. Very few of this species are ever bothered to be exported as Live.

Example: Indicative Frozen Pricing (US\$ per GROSS WEIGHT kg CFR Taiwan)

Size (g)		100-150	150-200	200-250	250-300
US\$/kg		13.00	13.50	15.00	15.00

Frozen, Raw, Uncleaned, Half cut and glazed to 10%, Origin: India
 * MAY 2008 market offering

Market Outlook and Growth Potential:	The lowest regarded live lobster in the market, its muddy taste may be because it inhabits muddy turbid waters. Not a good traveller or re-tanker, not a good potential for Aquaculture.
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Scyllarides squammosus



SCYLLARIDES SQUAMMOSUS

8.2.6 Slipper Lobsters – *Scyllarides squammosus* and *haanii*

Chinese Name:	Hong Pa
Other Names:	Kipas Merah, Slipper Lobster
Basic Description:	Body red-brown to orange, some with purple tinges. Note <i>S. Haanii</i> is often caught in smaller quantities and mixed together. <i>S. Haanii</i> is similar in appearance but with many humps.
Main market (live):	China/HK and Taiwan
Sizing (Live):	150-300g, 300-500, 500-1000g, 1000g+
Size Preference:	300g+

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 150	150-300	300-500	500-1000	1000+
US\$/kg	20.00	30.00	35.00	40.00 45.00	

Re-tanking:	Tanks very well and usually with low mortality on air arrivals
Quality Comments:	Hardy species with very white flesh
Major Sources:	Indonesia, Australia, (previously Hawaii), East Africa
Other Markets:	USA, Australia, Europe, Japan, Korea (Frozen)

Until recently, the largest commercial producer for this species was Hawaii which caught up to 1000 mt per season as a by-catch to the spiny lobster fishery. The majority of the catch was sold either locally as whole or into the US market as Tails.

One of the other larger producers of a similar species Brazil (*Scyllarides brasiliensis*) supply majority to USA has also recently dramatically reduced it's production following changes in spiny fishing regulations which prohibit the use of trammel nets on the reefs.

Market Outlook and Growth Potential:	<p>One of the most sort after Slipper / bug / lobster species in Taiwan and Southern China, a local delicacy in northern Taiwan. This species has huge potential, and has significant opportunity to be as popular as <i>P. ornatus</i> in both the live, whole frozen and raw tail markets.</p> <p>This is by far, other than <i>P. ornatus</i> has the most potential for full scale production. The only limiting factor is the untested ability for the Market consumes large volumes, as this is not generally seen in volumes. This is also considered a topshelf item in China, Japan and western markets. The consideration of market growth and the release of volume into the market must be carefully planned to develop this item to its full potential.</p>
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PARABICUS ANTARCTICUS

8.2.7 Parribacus antarcticus / Parribacus japonicus

Chinese Name:	Hei Pa
Other Names:	Kipas Hitam / Japanese Mitten Lobster / Zori ebi / Black Slipper Lobster
Basic Description:	Flattened with sandy/yellowish body, mottled with brown and black patches (both species very similar and often confused)
Main Market:	Taiwan, HK/China, Japan
Sizing:	Under 150, 150-300g, 300g+
Size Preference:	100g+ (China and Taiwan)

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 150	150-300	300-500	500+
US\$/kg	15.00	20.00+	25.00+	30.00-40.00

Re-tanking:	Re-tanks and transport well
Major Sources:	Indonesia, Taiwan, Philippines, Thailand (the main source is Philippines)
General Comments:	Very popular in Southern Taiwanese restaurants and found throughout the country in most live market places. Supply is presently unstable in both value and piece sizing.
Market Outlook and Growth Potential:	Very similar to <i>Scyllarides squammosus</i> , the <i>P. antarcticus</i> has same attributes and market demands, however does not attract quite the same prices due to its lower meat content. This is mainly due to the slightly flatter head and does not have the uniform red colour of the <i>S. squammosus</i> . There is still good potential in this market.



THENUS ORIENTALIS

8.2.8 Thenus Orientalis

Chinese Name:	Pipa (琵琶虾)
Other Names:	White Kipas, Bai Pa Xia, Sand Lobster, Bugs, Moreton Bay Bugs
Basic Description:	All over brownish with reddish brown granules. Colour can vary from deep brownish red to purplish brown
Main market (Live):	HK/China, Korea, Japan, Thailand *also very popular and highly prized in Southern Japan (Fukuoka)
Sizing (Live):	50-100g, 100-150g, 150-200g, 200-300g, 300g+
Size Preference:	100g+ (China and Taiwan), majority available under 200g

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 50	50-100	100-150	150-200	200-300	300+
US\$/kg	7.00	10.00	15.00	18.00	22.00	30.00

Re-tanking:	Average to so-so. Often high tank mortalities for extended holding, depending on pre-export conditioning.
Quality Comments:	Product is usually caught as a byproduct to trawling or by crab fishers. Onboard holding and market transport methods are often rudimentary with impacts on quality.
Main Market (Whole Frozen):	Europe, Korea, Japan, Australia, Japan
Sizing (Whole Frozen):	50-100g, 100-150g, 150-200g, 200-300g, 300g+
Size Preference:	100g+

Indicative Frozen Pricing (US\$ per kg CFR Australia)

Size (g)	U/50	50-100	100-150	150-200	200-300	300+
US\$/kg	N/A	6.50	10.00	12.00 13.00		15.00

Main Market (Frozen Tail):	USA, Europe, Korea, Japan, Australia
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Indicative Frozen Tail Pricing (US\$ per pound CFR USA)

Size (oz)	U / 1	1-2	2-4	4-6	6-8	8+
US\$/lb	6.50-7.00	10.25	12.25 12.50 12.75 13.00			

Major Sources:	Indonesia, Sri Lanka, India, Australia, Middle East
Other Comments:	The positive traits of this species are well recognized. Sweet flavour, thin shell, low gurrie / stomach size, small legs and high meat content which is not disproportionately affected with size.
Market Outlook and Growth Potential:	The demand and versatility for <i>Thenus</i> sp. across the globe is without doubt large and significantly unmet, be it for Live, Whole Frozen or Frozen Tails. Although unlikely to achieve the same heights of live <i>P. ornatus</i> or live <i>Scyllarides</i> , <i>Thenus</i> species it is known to grow extremely fast and is recognized to have significant opportunity for volume supply of both live and whole frozen.

China / Taiwan Markets

Although this species is not considered to re-tank overly well and hold for extended periods, it is known to sustain relatively well for long enough to move from distributor to end user / consumer. The delayed period of time after mortality before this species develops melanosis or flesh deterioration makes this a very suitable species for frozen substitution at a later date.

Western Markets

The premium return in western markets is no doubt for whole frozen. With this species being generally a bycatch to trawl or crab industries, it is these days no-where caught in substantial volumes, yet it is well regarded throughout the world and in high demand whenever available.

Generally it could be said that the unstable supply of *Thenus* sp. is the limiting factor behind its pricing and more widespread use. Chefs and restaurateurs although very keen to include this species into menu's for it's notoriety and popularity, are generally nervous about the likely issues behind finding a reliable and consistent supply whether it be for small or larger sizes.



IBACUS SP.

8.2.9 Ibacus SP.

Chinese Name:	Honghei Pa
Other Names:	Fan Lobster / Uchiwa ebi
Basic Description:	Flattened and purplish brown colour all over (much flatter than <i>Thenus</i> sp)
Sizing:	50-100, 100-150, 150+
Size Preference:	100g+

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size (g)	U / 50	50-100	100-150	150-200	200+
US\$/kg	7.00	15.00	18.00 20.00	23.00	

Tanking Comments:	High Mortality and not as well regarded by restaurants
Major Sources:	China, Vietnam, Thailand, Taiwan
Other Markets:	Apart from arriving fresh into the local Asian markets, this species is mostly sold as frozen. Having a very low meat yield from whole, this species is more often sold as frozen tails into USA and Europe.

Indicative Frozen Tail Pricing (US\$ per pound CFR USA)

Size (oz)	U / 1	1-2	2-4	4-6	6-8	8+
US\$/lb	6.50-7.00	10.25	12.25 12.50	12.75 13.00		

Market Outlook and Growth Potential:	Very low meat yields and High Mortality for live forms, Muddy taste and not well regarded in all markets. No real market potential for aquaculture.
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8.3 Chinese/Hong Kong Import Statistics

China Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 01/2006 - 08/2006									
Partner Country	Unit	Quantity							
		01/2006	02/2006	03/2006	04/2006	05/2006	06/2006	07/2006	08/2006
World	KG	24124	32326	81949	50263	60987	58269	53430	64137
Australia	KG	9	0	158	0	0 435		1207	0
Canada	KG	1069	1188	991	0	0 123	5	0	27636
China	KG	0	0	755	0	0 0 0 0			
France	KG	0	0	0 0 0 0 0 0					
India	KG	0	0	0 0 0 0 0 0					
Indonesia	KG	0	0	598	0	0 0 0 0			
Malaysia	KG	0	0	0 0 0 0 0 0					
Mexico	KG	0	0	0 0 394		1	118	0	0
Myanmar	KG	6242	6248	6257	3794	7872	0	0	0
NZ	KG	0	0	0 0 0 0 390					0
Pakistan	KG	170	220	973 127	5	2257	314	0	0
Philippines	KG	0	0	0 0 0 0 0 0					
Sth Africa	KG	16120	24430	71360	41660	45112	51610	38100	18946
Tanzania	KG	354	0	105	90	0	0 0 0		
Thailand	KG	0	130	752	3324	1805	4317	13733	17555
USA	KG	0	0	0 0 0 240				0	0
Vietnam	KG	160	110	0	0 0 0 0 0				
Yemen	KG	0	0	0 120		0	0 0 0		

China Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 09/2006 - 04/2007									
Partner Country	Unit	Quantity							
		09/2006	10/2006	11/2006	12/2006	01/2007	02/2007	03/2007	04/2007
World	KG	34139	35495	77349	64021	131183	87898	122379	56668
Australia	KG	230	0	0 615		1682	4661	34814	29972
Canada	KG	0	0 0 20			272	109	148	13
China	KG	0	0 0 0 0 0 0 0						
France	KG	0	0 0 0 30				0	0 59	
India	KG	0	0 0 405			0	0 0 214		
Indonesia	KG	1023	847	55053	17541	28916	56643	45933	2151
Malaysia	KG	0	0 0 127		06	59899	0	0 0	
Mexico	KG	0	0 0 0 0 0 0 0						
Myanmar	KG	4126	3181	5917	6134	4020	4465	5490	8669
NZ	KG	1540	4174	814	0	0 0 0 0			
Pakistan	KG	1270	4540	3390	350	84	700	300	0
Philippines	KG	0	0 0 0 0 0 0 0						
Sth Africa	KG	15622	13742	4920	13430	24500	16220	14894	3600

Tanzania	KG	0	0 0 0 0 0 0						
Thailand	KG	10328	8689	6985	12820	11210	0	17500	7480
USA	KG	0	0 156		0	0 0 0 0			
Vietnam	KG	0	322	114 0		570	5100	3300	4510
Yemen	KG	0	0 0 0 0 0 0						

China Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 05/2007 - 12/2007									
Partner Country	Unit	Quantity							
		05/2007	06/2007	07/2007	08/2007	09/2007	10/2007	11/2007	12/2007
World	KG	80460	49128	81019	48131	54151	42775	32228	50926
Australia	KG	19901	880	19208	10920	16317	13374	17905	12321
Canada	KG	0	1288	157	61	0	0 318		0
China	KG	0	0 0 0 0 0 0						
France	KG	69	0	60	62	0	0 0 60		
India	KG	170	0	300	0	0 0 0 0			
Indonesia	KG	2031	1241	3360	12850	3600	0	0	0
Malaysia	KG	37156	21462	30832	0	10255	5446	0	31006
Mexico	KG	0	0 0 0 0 0 0						
Myanmar	KG	6457	6047	4962	3614	4392	3054	3017	5633
NZ	KG	0	0 0 231			211	0	0 0	
Pakistan	KG	0	0 0 0 390				6602	500	0
Philippines	KG	636	485 282 495 354 71					0	0
Sth Africa	KG	4280	7220	10410	12150	5510	4050	3770	1000
Tanzania	KG	0	0 0 0 0 0 0						
Thailand	KG					177	428	183	531
USA	KG	0	0 18		0	0 0 10			0
Vietnam	KG	5880	6975	11430	7710	12945	9750	6525	375
Yemen	KG	0	0 0 0 0 0 0						

Hong Kong Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 01/2006 - 08/2006									
Partner Country	Unit	Quantity							
		01/2006	02/2006	03/2006	04/2006	05/2006	06/2006	07/2006	08/2006
World	KG	852863	552920	553802	510217	542544	358515	334966	306968
Australia	KG	634420	390868	348906	292717	296449	98746	70503	55855
Canada	KG	0	0	2329	1240	0	680	1070	313
China	KG	300	0	0	0	0 0 0 146			5
France	KG	101	5	0	0	6 8 11			15
Guinea	KG	0	0	0	0	120	0	0 0	
India	KG	10726	13314	13864	13475	13656	10467	7467	6404
Indonesia	KG	20143	27202	48464	31975	35646	37895	19737	32946
Kenya	KG	343	841	495	462	0	0 0 0		
Madagascar	KG	0	105	558	0	0 0 0 0			

Malaysia	KG	0	0	428	2320	0	130	689 163	1
Mexico	KG	0	0	312	0	0 0 0 0			
Myanmar	KG	0	0	0	0	0 0 0 0			
Namibia	KG	525	0	0	525	0	0 0 0		
NZ	KG	133389	77677	47439	68086	95954	109594	127422	157383
Pakistan	KG	0	577	2605	4154	2242	1246	0	0
PNG	KG	0	1347	1750	1037	46	0	0 0	
Philippines	KG	6616	4903	7850	6161	5480	3444	3178	4745
Singapore	KG	510	0	0	148	134 0		0	0
Sth Africa	KG	23006	24676	31275	58492	70009	83550	90948	31434
Sri Lanka	KG	17177	1325	25431	13843	8963	7989	10933	9170
Tanzania	KG	1669	1834	1327	2123	1486	1800	1760	2272
Thailand	KG	0	3708	17739	11101	11117	2396	548	647
Ukraine	KG	0	0	0	0	0 0 0 0			
UAE	KG	628	1848	2424	2085	1236	570	310	830
USA	KG	2660	2150	592	0	0 0 390			1858
Vietnam	KG	0	0	14	273	0	0 0 0		
Yemen	KG	650	540	0	0	0 0 0 0			

Hong Kong Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 09/2006 - 04/2007									
Partner Country	Unit	Quantity							
		09/2006	10/2006	11/2006	12/2006	01/2007	02/2007	03/2007	04/2007
World	KG	353124	424585	448976	795425	709784	841710	531989	498352
Australia	KG	34876	106341	175582	433550	376923	484617	299010	250155
Canada	KG	574	644 287	303 714 129			3	303	1200
China	KG	1020	0	0 0 0 0 0 0					
France	KG	13	9	21	5	54	32 7		33
Guinea	KG	0	0 0 0 0 0 0						
India	KG	8835	11375	10505	6890	5026	2680	3508	2279
Indonesia	KG	43486	40437	43720	112766	83321	101008	39758	44147
Kenya	KG	620	665 375 142		1	1399	421	407 359	
Madagascar	KG	0	0 0 0 0 0 0						
Malaysia	KG	596	1159	0	354	350 140 0			0
Mexico	KG	11476	29390	47299	27551	15804	12019	936	0
Myanmar	KG	0	0 0 75			1060	875	300	795
Namibia	KG	0	39	0	0 0 0 0 0				
NZ	KG	169993	113577	104478	97759	114220	133825	52465	75945
Pakistan	KG	12250	23425	4944	475	131	4448	6298	2278
PNG	KG	0	0 0 0 0 0 0						
Philippines	KG	3091	6891	3425	4224	3930	3773	3254	4830
Singapore	KG	0	0 0 0 0 0 0						
Sth Africa	KG	14898	38023	3639	70306	72619	74734	95706	94519
Sri Lanka	KG	408	19738	16240	11406	9744	974	12711	6179
Tanzania	KG	1917	1750	1996	2107	1564	1737	2512	1920
Thailand	KG	31216	9373	8592	9940	14461	12938	12909	13026

Ukraine	KG	0	420	0	0 0 0 0 0				
UAE	KG	545	0	2341	1709	757	738 125	7	267
USA	KG	16836	18608	24896	10206	7707	5458	648	420
Vietnam	KG	474	2721	636	4378	0	0 0 0		
Yemen	KG	0	0 0 0 0 0 0 0						

Hong Kong Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 05/2006 - 12/2007									
Partner Country	Unit	Quantity							
		05/2007	06/2007	07/2007	08/2007	09/2007	10/2007	11/2007	12/2007
World	KG	492514	338514	336553	307708	341850	353974	412507	570604
Australia	KG	232223	91622	57115	49659	40638	86315	158565	329804
Canada	KG	143	10	861	1207	533	0	0	0
China	KG	0	0 0 0 0 0 0 0						
France	KG	92	150	55	55 58 37 136				111
Guinea	KG	0	0 0 0 0 0 0 0						
India	KG	6130	1440	4083	4069	10901	4644	3999	5826
Indonesia	KG	38945	30748	29592	24504	21158	26443	47741	74752
Kenya	KG	111	0	0 0 0 103				0	365
Madagascar	KG	0	0 0 0 0 0 0 0						
Malaysia	KG	306	220	0	0 0 73			0	0
Mexico	KG	0	0 0 0 111			00	5515	17641	7397
Myanmar	KG	308	75	181	1116	427	283 546 155		5
Namibia	KG	0	0 0 0 0 0 0 0						
NZ	KG	102797	109088	140541	148552	150197	96631	116042	98017
Pakistan	KG	2627	264	0	309	9658	9475	4016	2060
PNG	KG	0	0 0 0 0 0 0 0						
Philippines	KG	6739	9000	4545	4297	5196	7358	3599	5101
Singapore	KG	0	0 0 0 0 0 0 0						
Sth Africa	KG	87152	81771	88097	56704	53338	51448	3376	20155
Sri Lanka	KG	5450	4875	5742	9196	2271	11327	8359	12362
Tanzania	KG	1742	1606	1950	2402	2192	2388	2117	1693
Thailand	KG	7453	7645	3324	5332	2220	6024	5122	5909
Ukraine	KG	0	0 0 0 0 0 0 0						
UAE	KG	296	0	0 0 0 252				1316	690
USA	KG	0	0 0 0 302			99	39367	36474	4168
Vietnam	KG	0	0	467	306	1664	6291	3458	639
Yemen	KG	0	0 0 0 0 0 0 0						

8.4 Taiwan Import Statistics

Taiwan Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 01/2006 – 08/2006									
Partner Country	Unit	Quantity							
		01/2006	02/2006	03/2006	04/2006	05/2006	06/2006	07/2006	08/2006
World	KG	238026	153819	156221	181262	122087	88786	83800	57160
Australia	KG	124407	48006	94770	134565	73458	55125	33759	2655
Bangladesh	KG	10	0	0	0	0	0	0	0
Canada	KG	0	0 22		0	0	0	0	0
China	KG	0	0 0		0	0	0	0	0
Hong Kong	KG	0	0 0		0	0	0	0	0
India	KG	0	0 0		0	0	0	0	0
Indonesia	KG	16087	24613	24995	13591	17455	14011	13648	17056
Japan	KG	0	0 0		0	0	3	0	0
Malaysia	KG	8	0 0		545	617	556	306	80
Mexico	KG	0	0 0		0	0	0	0	0
Myanmar	KG	65	116	832	1122	3557	50	231	0
Netherlands	KG	0	0 0		5	0	0	0	0
NZ	KG	0	0 253	9	0	0	1257	399	0
Pakistan	KG	0	0 0		0	0	0	0	0
Philippines	KG	6684	10761	9435	14441	15585	10545	12070	12100
Sth Africa	KG	588	1029	1225	1127	588	1034	9724	4249
Sri Lanka	KG	0	0 0		0	0	0	0	0
Thailand	KG	2645	1986	3945	5839	3930	2707	3079	4501
UAE	KG	1038	1987	1594	2169	1159	0	0	0
USA	KG	82950	61816	15678	2434	0	0	0	5134
Vietnam	KG	3544	3505	1186	5424	5738	3498	10584	11385

Taiwan Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 09/2006 - 04/2007									
Partner Country	Unit	Quantity							
		09/2006	10/2006	11/2006	12/2006	01/2007	02/2007	03/2007	04/2007
World	KG	59586	130664	168904	216033	139882	51258	101521	109461
Australia	KG	0	0 540		31745	31119	12195	41325	65977
Bangladesh	KG	0	0 0 0			0	0	0	0
Canada	KG	0	0 0 0			0	0	0	0
China	KG	36	20 0		0	0	0	0	0
Hong Kong	KG	22	351	0	0	0	0	0 190	
India	KG	0	0 0 0			0	0	1171	2035
Indonesia	KG	10852	9198	11056	26439	21843	9323	17088	15727
Japan	KG	0	0 0 0			0	0	0	0
Malaysia	KG	70	0	120	104	10	0	0 346	
Mexico	KG	2040	12755	23501	12674	6842	1952	2516	0
Myanmar	KG	0	0 0 501			252	160	260	2135

Netherlands	KG	0	0 0 0			0	0	0	0
NZ	KG	684	0	0 0		0	0	3	0
Pakistan	KG	1335	0	0 0		0	0	0	0
Philippines	KG	6173	5906	7637	8374	6250	3749	11086	9091
Sth Africa	KG	0	437	388 175	4	5568	2522	7013	4250
Sri Lanka	KG	0	0 683		0	0	0	0	0
Thailand	KG	1023	1570	2276	917	123	96	1905	2690
UAE	KG	150	110 203 182			169	0	0	146
USA	KG	32411	98781	121846	133280	67202	17478	14514	3427
Vietnam	KG	4790	1536	654	63	504	3783	4640	3447

Taiwan Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 05/2007 - 12/2007									
Partner Country	Unit	Quantity							
		05/2007	06/2007	07/2007	08/2007	09/2007	10/2007	11/2007	12/2007
World	KG	113210	77199	43387	46492	54064	132878	86509	111065
Australia	KG	62732	34669	13815	6	5	19	12	17556
Bangladesh	KG	0	0 0 0			0	0	0	0
Canada	KG	0	0 0 0			0	0	0	0
China	KG	0	0 0 0			0	0	0	0
Hong Kong	KG	1264	138	24	0	0	0 0 0		
India	KG	624	1722	1703	1556	998	1255	784	0
Indonesia	KG	18938	11714	9973	14070	12412	15270	15531	28533
Japan	KG	0	10	5	10	10	0	0	0
Malaysia	KG	204	528	70	152	75	12 38 0		
Mexico	KG	0	0 0 0			3670	11818	6559	4097
Myanmar	KG	4913	924	0	0	0	0 0 0		
Netherlands	KG	0	0 0 0			0	0	0	0
NZ	KG	0	0 0 0			0	0	0	0
Pakistan	KG	0	0 0 0			0	0	42	378
Philippines	KG	7223	10095	4952	12184	7022	5157	5119	3954
Sth Africa	KG	4727	5154	4772	3161	1067	1262	0	291
Sri Lanka	KG	0	21	0	0	0	0	484	1028
Thailand	KG	825	878 133 65			469	317	713	657
UAE	KG	0	0 0 0			238	86	336	0
USA	KG	0	0 0 0			19860	93042	56108	54439
Vietnam	KG	11760	11346	7940	15287	8238	4640	783	132

8.5 Japanese Import Statistics Japan 2006

Frozen Lobster	Dec 06			Jan-Dec 2006		
	Kg	Amount (x1000)	CandFJPY/Kg	Kg	Amount (x1000)	CandFJPY/Kg
Total	344,495	735,674	2,135	3,741,390	8,396,184	2,244
Philippine	7,870	11,685	1,484	119,006	172,614	1,450
Indonesia	52,877	110,469	2,089	93,711	190,919	2,037
Myanmar	456	1,535	3,366	2,341	9,218	3,937
India	68,050	148,101	2,176	623,410	1,126,441	1,806
Pakistan	5,870	9,020	1,536	24,850	39,037	1,570
Sri Lanka	7,190	16,083	2,236	19,915	39,707	1,993
Oman	-	-	-	6,903	20,557	2,977
UAE	6,990	17,080	2,443	6,990	17,080	2,443
England	-	-	-	26,000	63,465	2,440
France	-	-	-	290,115	649,957	2,240
Canada	-	-	-	1,546	7,001	4,528
USA	16,960	35,873	2,115	90,959	197,455	2,170
El Salvador	-	-	-	760	1,276	1,678
Bahamas	8,182	45,882	5,607	17,580	96,547	5,491
Cuba	25,500	51,666	2,026	546,705	1,025,570	1,875
Ecuador	-	-	-	6,000	9,881	1,646
Brazil	12,730	30,765	2,416	66,709	154,641	2,318
St Helena	45,250	118,664	2,622	116,660	270,531	2,318
Madagascar	14,650	27,546	1,880	152,220	258,984	1,701
Namibia	-	-	-	252,480	580,578	2,299
South Africa	30,780	77,742	2,525	308,490	720,412	2,335
Australia	34,580	16,833	486	926,090	2,636,099	2,846
New Zealand	6,560	16,730	2,550	41,950	108,214	2,579

Japan 2006: January – December 2006 Live Lobster

Live Lobsters	Dec-06			Jan-Dec 2006		
	kg	Amount (x1000)	CandFJPY/kg	kg	Amount (x1000)	CandFJPY/kg
Total	170,390	686,634	4,029	1,229,682	5,053,761	4,109
Taiwan	-	-	-	6,398	38,870	6,075
Vietnam	-	-	-	369	1,038	2,813
Philippines	-	-	-	148	242	1,635
Indonesia	820	2,857	3,484	5,736	23,717	4,134
Yemen	-	-	-	798	2,294	2,874
Canada	-	-	-	495	1,198	2,420
USA	3,720	13,397	3,601	19,251	68,882	3,578
South Africa	20,540	71,706	3,491	187,550	623,402	3,323
Australia	141,711	583,641	4,118	792,823	3,302,512	4,165
New Zealand	3,599	15,033	4,176	216,114	991,606	4,588

Japan 2007: January – December 2007 Frozen Lobster

Frozen Lobster	Dec 2007			Jan-Dec 2007		
	CandF	Kg	x\1000	CandF	Kg	x\1000
Total	2,777	291,733	810,259	2,617	3,573,626	9,350,520
Vietnam		-	-	3,016	2,842	8,571
Philippines	1,685	6,425	10,824	1,728	105,103	181,647
Indonesia	2,058	58,302	119,994	1,920	394,992	758,418
Myanmar		-	-	3,471	263	913
India	2,101	11,500	24,156	2,042	373,690	763,087
Pakistan		-	-	1,590	2,130	3,387
Sri Lanka	2,345	14,968	35,095	2,363	46,740	110,436
Oman		-	-	2,184	12,739	27,818
UAE	4,581	7,808	35,769	3,352	46,736	156,652
Yemen		-	-	2,907	14,049	40,836
England	2,794	13,000	36,324	2,584	37,128	95,924
France		-	-	2,655	310,520	824,427
USA	2,684	23,360	62,698	2,694	113,600	306,003
Bahamas	5,247	18,143	95,195	5,029	33,673	169,337
Cuba	2,676	12,436	33,281	2,606	326,612	851,057
Brazil	3,493	8,752	30,569	3,155	36,299	114,526
St Helena	2,745	26,000	71,380	2,604	67,870	176,708
Kenya		-	-	1,485	10,212	15,163
Tanzania		-	-	1,606	7,428	11,932
Madagascar	1,848	6,840	12,637	2,184	186,745	407,906
Namibia		-	-	2,826	159,950	452,025
South Africa	2,647	51,890	137,356	2,694	618,225	1,665,740
Australia	3,249	32,309	104,981	3,327	643,440	2,140,759
New Zealand		-	-	2,970	22,640	67,248

Japan 2007: January – December Live Lobster

Live	Dec 2007			Jan-Dec 2007		
	CandF/kg	Kg	x\1,000	CandF/kg	Kg	x\1,000
Lobster						
Total	4,060	127,530	517,801	4,514	969,315	4,375,025
Taiwan	-	-	-	6,119	4,982	30,483
Philippines	-	-	-	2,876	874	2,514
Indonesia	3,523	889	3,132	3,853	6,295	24,254
USA	3,904	3,076	12,009	3,951	14,886	58,810
South Africa	3,871	14,140	54,733	3,639	207,536	755,171
Australia	4,079	105,917	432,057	4,667	601,273	2,805,864
New Zealand	4,546	3,268	14,855	5,231	133,229	696,914
USA(Guam)	4,229	240	1,015	4,229	240	1,015

Note: Japanese import statistics which are generally considered to have the least data corruption are excellent market indicators across the broadest range of species and origins.

Japan Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 01/2006 – 08/2006									
Partner Country	Unit	Quantity							
		01/2006	02/2006	03/2006	04/2006	05/2006	06/2006	07/2006	08/2006
World	KG	95639	91707	132430	128069	115079	115416	87169	80179
Australia	KG	80425	72779	117263	104100	93799	78850	40262	1704
Canada	KG	0	495	0	0	0	0 0 0		
Guam	KG	0	0 0 0			0	0	0	0
Indonesia	KG	313	303 513 535			495	389	413	737
NZ	KG	2751	550	495 0		0	8500	24546	58848
Philippines	KG	0	0 0 0			0	148	0	0
Sth Africa	KG	11250	16140	13130	21900	19360	25100	20980	18890
Taiwan	KG	0	0 551		1025	1425	2429	968	0
US	KG	720	1440	0	0	0	0 0 0		
Vietnam	KG	0	0 0 369			0	0	0	0
Yemen	KG	180	0	478	140	0	0 0 0		

Japan Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 09/2006 - 04/2007									
Partner Country	Unit	Quantity							
		09/2006	10/2006	11/2006	12/2006	01/2007	02/2007	03/2007	04/2007
World	KG	58944	66372	88288	170390	74007	73868	97652	95851
Australia	KG	4215	12190	45525	141711	59075	54358	76468	73233
Canada	KG	0	0 0 0			0	0	0	0
Guam	KG	0	0 0 0			0	0	0	0
Indonesia	KG	288	300 630 820			340	310	528	579
NZ	KG	42461	40548	33816	3599	550	0	0	0
Philippines	KG	0	0 0 0			0	0	0	0
Sth Africa	KG	11260	7250	1750	20540	11040	17700	19750	21150
Taiwan	KG	0	0 0 0			0	0	906	889
US	KG	720	6084	6567	3720	3002	1500	0	0
Vietnam	KG	0	0 0 0			0	0	0	0
Yemen	KG	0	0 0 0			0	0	0	0

Japan Import Statistics									
Commodity: 030621, Rock Lobster and Other Sea Crawfish Not Fz, In Shell Or Not, Incl Boiled In Shell									
Monthly Series: 05/2007 - 12/2007									
Partner Country	Unit	Quantity							
		05/2007	06/2007	07/2007	08/2007	09/2007	10/2007	11/2007	12/2007
World	KG	95224	93399	76781	68322	47942	52158	66581	127530
Australia	KG	70866	66095	38026	1988	3976	8343	42928	105917
Canada	KG	0	0	0	0	0 0 0 0			
Guam	KG	0	0	0	0	0 0 0 240			

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Indonesia	KG	371	664	365	638	344 345 922 889			
NZ	KG	346	683	14727	42586	27326	24234	19509	3268
Philippines	KG	120	260	364	130	0	0 0 0		
Sth Africa	KG	22660	24050	22620	22980	16296	14700	450	14140
Taiwan	KG	861	1647	679	0	0 0 0 0			
US	KG	0	0 0		0	0	4536	2772	3076
Vietnam	KG	0	0	0	0	0 0 0 0			
Yemen	KG	0	0	0	0	0 0 0 0			

8.6 Market and Product Data – Species Snapshot (*P. Ornatus*)

P. ornatus

Chinese Name:	Hualong (花龙)
Other Names:	Mutiara, Tropical, Flower, Tiger, Painted, North Australian
Basic Description:	Body greenish with bluish carapace. Small antennae and legs ringed with yellow and black. Tail with repeating dark bands and large yellow spots at tail hinges.

Wild Caught (Live)

Major Markets:	China, HK, Taiwan
Major Sources:	Australia/PNG/India/Indonesia/Middle East /Burma/Sri Lanka,
Main Sizes:	60-100g/ 100-300g/ 300-600g/6 00g-1kg/ 1-1.5kg/ 1.5-2kg/ 2-2.5kg/ 2.5kg+

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size	60-100	100-300	300-600	600-1kg	1-1.5kg	1.5-2kg	2-2.5kg	2.5kg+
US\$/kg	9.00	34.00	34.00	47.00	53.50	50.00	43.00	39.00

Size Preference:	600g-2000g (CHINA), 400-800g (Taiwan)
Tanking Comments:	The easiest of all lobsters to transport and re-tank by distinct contrast to other warm water species and especially for larger sizes.
Market Entry:	Usually by plane with arrival via HK, with some limited arrangements and direct landings into major Chinese cities. Some quantities landed illegally by fishing boat.

Aquacultured (Live)

Major Markets:	China, HK, Taiwan
Main sizes:	300-600g, 600-800g, 800-1000g, 1000-2000g

Indicative Live Pricing (US\$ per kg CFR Hong Kong)

Size	300-600	600-1kg	1-1.5kg	1.5-2kg
US\$/kg	42.00	49.00	55.00	50.00

Size Preference:	600g-2000g (China), 400-800g (Taiwan)
Quality Comments:	Very strong and easy to re-tank
Main origin:	Vietnam
Market Entry:	South of China by truck, Taiwan by Air
Market Comments:	Market is increasing steadily in size and demand and is likely limited only by supply.
Consumption comments:	Excellent presentation species, used raw for Sashimi and in Chinese style cooking.

Wild and Aquacultured - Frozen Tails

Market Entry:	Usually by sea-freight into major ports of buyer countries
Major Markets (Whole):	Taiwan, China, HK, Japan, Korea
Main Sizes (Whole, Raw):	150-200, 200-250, 250-300, 300-500 (little whole frozen bigger)

Indicative Whole Frozen Pricing (US\$ per kg CFR Taiwan)

Size (g)	100-150	150-200	200-250	250-300	300-500	500+
US\$/kg	14.00	17.00	19.00	20.00	21.00	21.00

Whole raw production resulting from live rejections (being a combination of *P. Homarus* and *P. ornatus*) was noted as available ex Vietnam during May for US\$16.50/kg CFR TAIWAN for sizes 150-400g

Wild and Aquacultured - Whole Frozen

Market Entry:	Usually by sea-freight into major ports of buyer countries
Major Markets (Tails):	USA
Main Sizes (Raw Tails):	3-4oz, 4-6oz, 6-8oz, 8-10oz, 10-12oz, 12-16oz, 16-20oz, 20oz+

Indicative Frozen Raw Tail Pricing (US\$ per pound CFR USA)

Size (oz)	3-4	4-6	6-8	8-10	10-12	12-16	16-20	20+
US\$/lb	19.00	21.00 22.00	22.00	22.50 22.	50	22.50	23.00	

(Australian or PNG Origin)

Indicative Frozen Raw Tail Pricing (US\$ per pound CFR USA)

Size (oz)	3-4	4-6	6-8	8-10	10-12	12-16	16-20	20+
US\$/lb	16.50	17.00	17.50	17.50	18.50 18.	50	18.50 18.50	

(Vietnam Origin – Farm Rejects)

General Comments

Wild production products are highly sought after, often target produced from Live, considered premium to all other warm water tail products and Australian products are often substituted against Australian coldwater products. Very few low quality pieces found. Very well regarded and considered excellent value in the US marketplace with the majority of tail production over 10oz.

Being a non target production item and often processed from weak, dead or stressed product, Vietnamese Aquacultured frozen production is generally regarded by the market as unstable. US buyers state that the Vietnamese frozen product has a distinct lack of flavour and are less preferred than wild caught products. There is very little production is available from farmed sources for Lobster Tails.

Market Entry: Usually by sea-freight into major ports of buyer countries

Peak demand periods for P. Ornatus in major Asian Live markets

Late December	Japanese end of year / New Year
January / Feb (early)	Chinese New Year (China /Taiwan),
April (end) / May	National day in China / Hong Kong / Taiwan Mothers day – all markets Golden Week – Japan
May / June / early July	Traditional wedding period

Currently the timing of wild caught *P. ornatus* landings are not entirely aligned with the peak demand periods of the market to optimize higher returns from live product sales. Exporters are forced to hold lobster from peak catch to high market demands.

However there are significant other demand periods that are taken full advantage of. These include:

Late July / August	Lead up to the Ghost Month (August lunar month)
August/ September	Mid Autumn festival (Moon festival)
October	Taiwan Festival 10th day of 10th month