



## CHINA'S LUXURY SEAFOOD DEMAND AND MEXICO'S FISHERIES

*Written by:*

Christopher Barron, Sarah Clark  
Michael Clayton, Jerod Myers and  
Wei Chun Julia Tang

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## Table of Contents

GRAPHS, TABLES, FIGURES AND MAPS.....	3
1 EXECUTIVE SUMMARY.....	4
2 INTRODUCTION.....	7
3 CHINESE SEAFOOD DEMAND.....	8
3.1 China’s Evolving Seafood Consumption.....	8
3.2 China’s Ability to Meet its Seafood Demand.....	16
3.3 Major Seafood Market Channels in China .....	21
3.4 Hong Kong and Luxury Seafood Demand.....	25
4 IMPACT OF CHINESE SEAFOOD DEMAND ON MEXICO.....	39
4.1 Mexico’s Seafood Production .....	39
4.2 Mexico’s Foreign Seafood Trade .....	42
4.3 Mexico-China Seafood Trade Channels and Trends .....	51
5 THE FUTURE OF MEXICO’S SEAFOOD IN THE CHINESE MARKETPLACE.....	64
5.1 Major Trends Impacting Chinese Seafood Demand and Mexico-China Seafood Trade .....	64
5.2 Impact of Major Trends on Mexico’s Luxury Seafood Fisheries.....	77
6 CONCLUSION .....	86
7 METHODOLOGY .....	87
8 APPENDICES.....	90
9 REFERENCES.....	132

## GRAPHS, TABLES, FIGURES AND MAPS

Title	Section
Graph 1: China's Seafood Consumption* v. Population Growth	4.1
Graph 2: Chinese Seafood Consumption* v. Global Seafood Consumption	4.1
Graph 3: Per Capita Disposable Income v. Consumption of Seafood Products	4.1
Graph 4: Hong Kong Consumer Price Index, by Seafood Category	4.1
Graph 5: Hong Kong Seafood Re-Exports to Mainland China v. Total Seafood Re-Exports	4.2
Graph 6: Hong Kong's Seafood Imports for Domestic Consumption v. Seafood Re-Exports	4.2
Graph 7: China's Aquaculture Production v. Mexico's Export of Fishmeal and Oils to All Destinations*	4.2
Graph 8: Average Prices of Luxury Focus Species at Restaurants	4.4
Graph 9: Volume and Value of Mexico's Luxury Fisheries*	5.1
Graph 10: Mexico's Top Seafood Exports by Volume	5.2
Graph 11: Mexico's Top Seafood Exports by Value	5.2
Graph 12: Top Importers of Luxury Focus Species* from Mexico by Volume and Value	5.2
Graph 13: Mexican Seafood* Exports to Hong Kong and China by Value	5.2
Graph 14: Hong Kong Indirect v. Direct Imports from Mexico	5.2
Graph 15: Hong Kong Top Seafood Imports from Mexico by Volume	5.2
Graph 16: Hong Kong Imports of Luxury Focus Species from Mexico	5.2
Graph 17: Aggregate Hong Kong Imports of Seahorse, All Sources	5.2
Graph 18: Volume of All Mexican Seafood Products Traveling through US Prior to Reaching Hong Kong	5.3
Table 1: Summary of Changes in Hong Kong Imports of Luxury Focus Species	4.4
Table 2: Top Suppliers of Luxury Seafood to Hong Kong, by Volume	4.4
Table 3: Average Prices of Luxury Focus Species at Restaurants	4.4
Table 4: Summary of Changes in Mexico's Largest Fisheries	5.1
Table 5: Largest Fisheries' Average Share of Total Mexican Fishery Landings and Ex-Vessel Value	5.1
Table 6: Summary of Changes in Mexico's Luxury Focus Species	5.1
Table 7: Mexican Exports of Luxury Focus Species, as Reported by Top Importing Countries	5.2
Table 8: Changes in Price of Luxury Focus Species Imports from Mexico	5.2
Table 9: Hong Kong Imports of Dried Seahorse from Mexico	5.2
Table 10: Major Ports in Mexico and US for Seafood Export to China	5.3
Table 11: The Impact of Foreign Exchange Scenarios on Chinese Seafood Demand and Mexico's Export Competitiveness	6.1
Table 12: Current Hong Kong Import Price, Biological Status and Monterey Bay Aquarium Seafood Watch Rating of Luxury Focus Species	6.2
Table 13: High Profile News Stories of Illegal Luxury Focus Species Trade	6.2
Table 14: The Impact of Key Events and Trends on Chinese Demand for Mexican Luxury Seafood Products and their Mitigating Factors	6.2
Table 15: Summary of Hong Kong Data Collection	8
Table 16: Summary of Hong Kong Data Collection	8
Figure 1: Simplified Chinese Live and Frozen Seafood Supply Chain for Domestic Consumption	4.3
Figure 2: Hong Kong Seafood Supply Chain	4.4
Map 1: Major Chinese Cities and Wholesale Seafood Markets	4.3
Map 2: Location of Seafood Exporters in the ProMéxico DIEX	5.2

## 1 EXECUTIVE SUMMARY

Over the past twenty years, the growth of China's middle class, with its increasing disposable income and its expanded access to global markets, has driven economic trends and affected natural resources far beyond the country's border. Other nations scramble to create policies and dedicate resources to address this growth, and multinational corporations adjust strategies to tap into the markets. The overall trend is clear and well-documented; what is less understood is the impact on particular product segments. One such segment is the luxury seafood trade.

The US Department of Commerce estimates that by 2015, China will make up close to 20% of global luxury consumption. While Western consumers often equate luxury goods with designer watches, expensive liquor and haute couture, a less-publicized category of luxury consumption in China with broad-reaching economic, cultural and environmental implications is the luxury seafood trade. Celebratory banquets are an important part of Chinese culture. Weddings, business gatherings and government meetings are often marked by lavish spreads of rare delicacies from across the plant and animal kingdoms. This growing demand for luxury seafood has set off a global 'blue gold rush', as Chinese traders seek new sources of these lucrative commodities.

This report examines the impacts of China's luxury seafood demand on one of China's growing trade partners: Mexico. Over the past decade many of Mexico's artisanal fisheries have been transformed by rising prices for marine species destined for China's dinner tables. Despite the scale of this trade, there is little available data or analyses of the impact of China's luxury seafood demand on Mexico's coastal economies and ecosystems. This paper aims to fill that gap by looking at five Mexican luxury seafood exports that have been most impacted by Chinese demand: sea cucumber, shark fin, geoduck, swim bladder and jellyfish.

### **Evolving Chinese Seafood Demand**

Today China represents a fifth of the world's population and consumes over one-third of the world's seafood, making it the largest single national consumer of seafood. Its total seafood consumption has more than tripled in the past twenty years, driven by a growing population and increasing per capita consumption. Chinese consumers, including those in Hong Kong,<sup>1</sup> are also purchasing a progressively more diverse basket of seafood products. For example, Chinese demand for luxury seafood – such as sea cucumber, shark fin, geoduck, swim bladder and jellyfish – has also expanded alongside rising incomes. The consumption of luxury seafood in China is tied to both social prestige and perceived health benefits associated with traditional Chinese medicine.

Even with the country's tremendous investment in domestic aquaculture to respond to this growing demand,<sup>2</sup> China's seafood imports have continued to grow, from 3.9 billion in 2009 to 5.5 billion in 2012. According to some estimates, by 2020, China will be importing over \$20 billion of seafood from around the world.

### **Mexico's Fisheries and Chinese Seafood Demand**

Mexico is the third largest seafood producer in Latin America, after Peru and Chile. Sardine, tuna, shrimp and squid fisheries made up nearly 60% of the Mexico's total catch from 2002-2012. Shrimp accounted for more than one-third of Mexico's total fishery value over the 10-year period.

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<sup>1</sup> Hong Kong is a major consumer of seafood imports from a variety of outlets (neighborhood wet markets, supermarkets, dried seafood shops and restaurants) and a gateway for much of the seafood that reaches Mainland China. In fact, from 2004-2011, Hong Kong re-exported to other destinations nearly a third of all seafood products it imported. About half of these re-exports were destined for Mainland China. For these reasons, this paper focuses on Hong Kong as an appropriate proxy for understanding market trends in broader China.

<sup>2</sup> As this demand increased and domestic production of wild-caught seafood stalled due to over-exploitation and increased fishing regulations, China invested heavily in its domestic aquaculture industry. By 2013, Chinese seafood production (for both wild-caught and farmed seafood) had grown to an estimated 58.7 million MT. It is predicted to account for well over one-third of global seafood production by 2030.

Overall the total value of Mexico's seafood trade (across all species) with China has skyrocketed, increasing about 850% from 2002 to 2012, driven primarily by tuna, shrimp and sardines. While luxury seafood products represent only a small portion of Mexico's total fishery exports, luxury seafood products are an important component of Mexico's seafood trade with Hong Kong. Since 2002, the total value of Mexico's seafood trade with Hong Kong has been consistently 3-5 times greater than its seafood trade with Mainland China, with a basket of seafood with a higher proportion of high value luxury species. Today Mexico is one of Hong Kong's top ten suppliers of shark fin, seahorse, sea urchin, yellow croaker and bivalves. Notably, several luxury species that are commonly traded with Hong Kong today, such as swim bladder, geoduck and jellyfish, were not part of commercial fisheries in Mexico just ten years ago.

### **The Future of Mexico's Seafood in the Chinese Marketplace**

Mexican exporters of luxury seafood products perceive the Chinese market as very important and have adapted their businesses to meet Chinese demand in a number of ways. Facing language and cultural barriers, a lack of reliable trade and price information, changing Chinese import and food safety requirements and high transportation costs, Mexican seafood exporters have responded to Chinese demand by investing in physical capital and marketing, securing new Mexican supply and complying with evolving Chinese import regulations. Seafood is one of the most highly regulated and costly imported food categories in Mainland China and, in 2012, additional food safety and certification requirements for the import of seafood into China were implemented, significantly impacting Mexican exporters.

Several factors will continue to influence the Mexico-China luxury seafood trade, including:

*The Chinese government's frugality campaign:* In 2012 the Chinese Communist Party instituted new frugality rules, aimed at curbing the use of public funds for lavish celebratory dinners, which often featured luxury seafood products such as shark fin, sea cucumber and fish maw. The frugality campaign has had significant impacts on the banquet trade in Beijing and other large cities. That said, luxury seafood demand is on the rebound as spending on luxury seafood shifts from government to private consumers and restaurants are shifting menus towards lower priced luxury seafood dishes to accommodate a wider price-conscious customer base.

*On-going food safety concerns in China and the associated regulatory response:* Several high-profile food contamination scandals over the past several years have undermined Chinese consumer confidence in the safety of their domestic food supply. Freshness and food safety are the most important attributes Chinese consumers consider when purchasing seafood and Chinese consumers generally have more confidence in imported seafood. Oversight of Mainland China's food safety system is shared by more than 10 government agencies, and there are clear examples of reactionary, disproportionate food safety policy that makes regulatory moves difficult to predict. Going forward, China's unpredictable implementation of food safety regulations presents a certain level of risk for Mexican seafood exporters.

*Evolving Chinese consumer preferences:* A lack of trust in China's domestic food production system and growing cachet associated with eating imported goods has led Chinese seafood consumers place value on imported seafood products. There are several examples of successful regionally-branded seafood products, including Japanese sea cucumber, South African abalone and Canadian geoduck. While Mexico is not generally associated with high quality seafood in China, several buyers in Hong Kong mentioned that Mexico does have a great reputation exporting high value abalone.

*Overall economic and market factors affecting Mexico-Chinese trade:* China's entry into the WTO in 2001 harkened a new era of trade liberalization, international cooperation and transparency. However, while China has signed 11 free trade agreements (FTAs) – including one with Chile, a FTA between Mexico and China does not appear likely in the near future. Nonetheless, Chinese and Mexican officials signed several memorandums

aimed to incite economic cooperation in 2013. As with food safety regulations, China's unpredictable implementation of import regulations create some risk for Mexican seafood exporters.

Foreign exchange also presents risks to Mexico's seafood export industry. The relative fluctuations of the Mexican Peso (MXN) and the Chinese Yuan (CNY) impact both China's ability to purchase seafood from Mexico and Mexican seafood exporters' competitiveness on the global market. The behavior of the US Dollar (USD) also impacts the Mexico-China seafood trade, as many seafood deals are denominated in dollars. As Mexican businesses increase their exports to China, they will have to follow currency fluctuations closely and develop strategies to mitigate their foreign exchange exposure.

Public policy groups point out that the continued growth of the Mexico-China seafood trade will impact Mexico's fish stocks and seafood industry in a variety of ways. According to a recent report on illegal fishing in Mexico, over four-fifths of Mexican fisheries are overexploited or have reached their maximum sustainable yield. High prices for the luxury focus species make them vulnerable to both legal and illegal fishing. The value of illegal luxury seafood confiscated over the last two years in Mexico (likely a small percentage of the real amount) was estimated at over \$26 million.

How authorities design and implement fishery and trade policy to address increased fishing pressure and to increase oversight of illegal trade channels will clearly affect the market. It could shift Chinese demand to alternative seafood products; it could also put additional price pressure on threatened stocks, if seafood smuggling routes are not addressed in tandem with environmental controls. Finally, if coupled with a crackdown on illegal fishing and trade, public and private investment that increases the production and processing capacity of legal Mexican luxury seafood products may result in better quality seafood together with higher and more stable prices from the Chinese market.

Chinese luxury seafood demand could impact Mexico's fish stocks and seafood industry in a variety of ways. The demand presents tremendous growth and investment opportunities, as well as real risks of overexploiting fishing stocks and proliferating illegal seafood trade. This report aims to highlight trends that can help inform business, investment and policy decisions.

## 2 INTRODUCTION

Over the past twenty years, China's economic growth has profoundly impacted the global economy. In China, rising incomes have changed the way tens of millions of Chinese people live. The middle class' newfound disposable income, coupled with easy access to new technologies and the global marketplace, has had far-reaching consequences. German carmakers, French fashion houses and American resort operators are all realizing economic benefit from a new class of Chinese luxury consumer. The US Department of Commerce estimates that by 2015, China will make up close to 20% of global luxury consumption.<sup>i</sup>

Another, less publicized category of luxury consumption in China has similar broad-reaching social and economic implications: the luxury seafood trade. Celebratory banquets are an important part of Chinese culture. Weddings, business gatherings and government meetings are often marked by lavish spreads of rare delicacies from across the plant and animal kingdoms. One report estimates that the Chinese government spent as much as \$60 billion on banquets in 2012 alone.<sup>ii</sup> Exotic menu items like shark fin soup, swim bladder, sea cucumber, geoduck and sea urchin can fetch over \$200 a plate and, in late 2013, at one Hong Kong apothecary, a single swim bladder was on sale for more than \$40,000!<sup>iii</sup>

Demand for luxury seafood has set off a global 'blue gold rush', as Chinese traders seek new sources of the lucrative commodities. When a fishing community is identified as a new source for a luxury species, there are often immediate consequences: local economies experience sudden and significant price rises, fishermen change their fishing behavior to take advantage of the new market opportunity, businesses invest in new business lines and increased processing capacity, and the complex relationships between species in the marine ecosystem begin to evolve. In many communities around the world, the high prices for luxury seafood species have not only contributed to overfishing but increased illegal fishing and illegal trade.

The rapid nature of these impacts, lack of reliable trade data, language barriers and sheer distance between supply and demand often mean that it is difficult for businesses, governments and civil society to anticipate and effectively respond to opportunities and threats associated with the development of these new markets.

This report explores the economic, social and environmental impacts of China's luxury seafood demand on one of China's increasingly important trade partners: Mexico. Over the past decade many of Mexico's artisanal fisheries have been transformed by rising prices for marine species destined for China's dinner tables. Chinese demand for luxury seafood products presents both great opportunities to Mexico's private sector and severe risks to not only the marine species and ecosystems but also to the fishermen and related businesses dependent upon them. Policy makers, business leaders and NGO representatives will be best able to take advantage of the opportunities that Chinese luxury seafood consumption presents and to manage the associated risks if they have information on the key trends in demand. This report seeks to present a recent historic analysis of China's evolving seafood demand, summaries of Mexico's production of luxury seafood species and the Mexico-China luxury seafood trade and key trends in this rapidly changing international market.

### NOTES:

*This report's analysis of the Mexico-China seafood trade begins with a "macro view" of Chinese consumption, Mexican production and Mexico-China seafood trade across all seafood products. It then examines several 'luxury focus species' of particular interest to the Mexico-China luxury seafood trade: swim bladder (from various species), shark fin (from various species), geoduck, sea cucumber, crab, octopus, sea urchin, jellyfish, croakers, seahorse, abalone and lobster.*

*Except where specifically noted, data presented for "China" includes both Mainland China as well as Hong Kong. All monetary amounts are in real 2012 US Dollars (USD), except where otherwise labeled. The most current data has been used when available. However, many of the sources consulted for this report had not yet published 2013 data.*

*Unless otherwise stated, all photos in the report were taken by CapLog staff.*

### 3 CHINESE SEAFOOD DEMAND

The first section of the report identifies major trends in Chinese seafood<sup>3</sup> consumption in recent years. It begins by looking at historic consumption of all seafood products since 1990 as well as the factors contributing to evolving seafood consumption patterns in China, and specifically luxury seafood consumption. To put these trends in perspective, China is compared to global patterns where data permits.

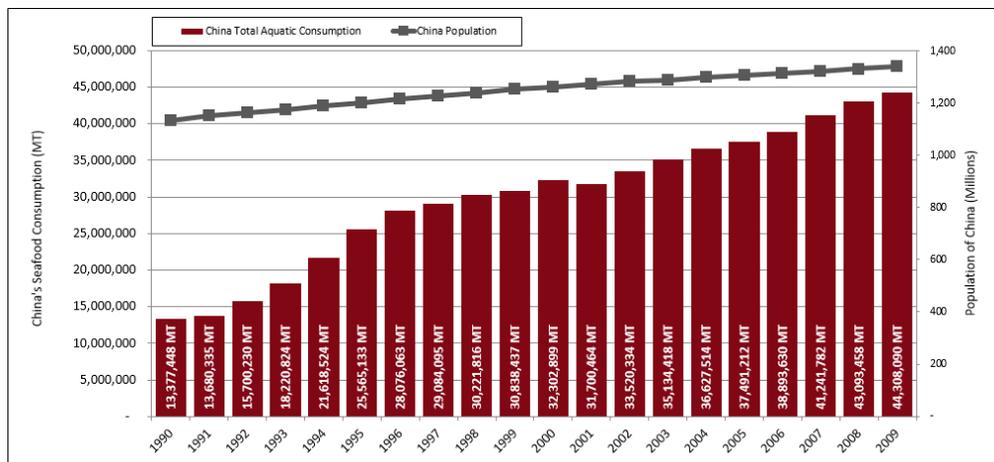
#### 3.1 China’s Evolving Seafood Consumption

- Today China represents about a fifth of the world’s population but consumes over a third of the world’s seafood supply, making it the world’s largest consumer of seafood. Its seafood consumption more than tripled in the past twenty years, driven by a growing population and increasing per capita consumption.
- Increasing per capita seafood consumption in both urban and rural areas has been facilitated by rising per capita disposable income (which more than tripled from just 2001-2011) as well as improved storage and transportation infrastructure. Chinese consumers are also able to purchase an increasingly diverse basket of seafood products, including domestically produced and imported products.
- Chinese demand for luxury seafood – such as sea cucumber, shark fin, geoduck, swim bladder and several other products – has also been growing with rising incomes. The consumption of luxury seafood in China is tied to both social prestige and the perceived health benefits of traditional Chinese medicine.

##### a) China’s economic boom and seafood consumption

Over the past 20 years, China has become the world’s largest seafood consumer, thanks to a growing population, rising GDP and an increase in the amount of seafood consumed per person. China represents roughly one fifth of the world’s population, but accounts for more than a third of total global seafood consumption.<sup>iv</sup> From 1990 to 2009, Chinese seafood consumption rose by 225% to 42.4 million MT (Graph 1). By 2030 China is projected to account for close to 40% of all global seafood consumption. Together with its regional neighbors, South and Southeast Asia are projected to account for up to 70% of global seafood consumption in 2030.<sup>v</sup>

**Graph 1: China’s Seafood Consumption\* v. Population Growth**  
(MT; 1990-2009)



Sources: FAO, Indexmundi.com, Populstat.info

\*Includes saltwater and freshwater, wild-caught and farmed products

<sup>3</sup> In this report the term ‘seafood’ applies to all aquatic products, including marine capture, farm-raised and freshwater fish, mollusks, crustaceans and other aquatic invertebrates.

Chinese per capita seafood consumption is also rising faster than the global average. (Graph 2) On average, each Chinese consumer eats 33 kgs of seafood per year, compared with the global average of 18 kg, making it the largest consumer, followed by Japan and the USA.<sup>vi</sup>

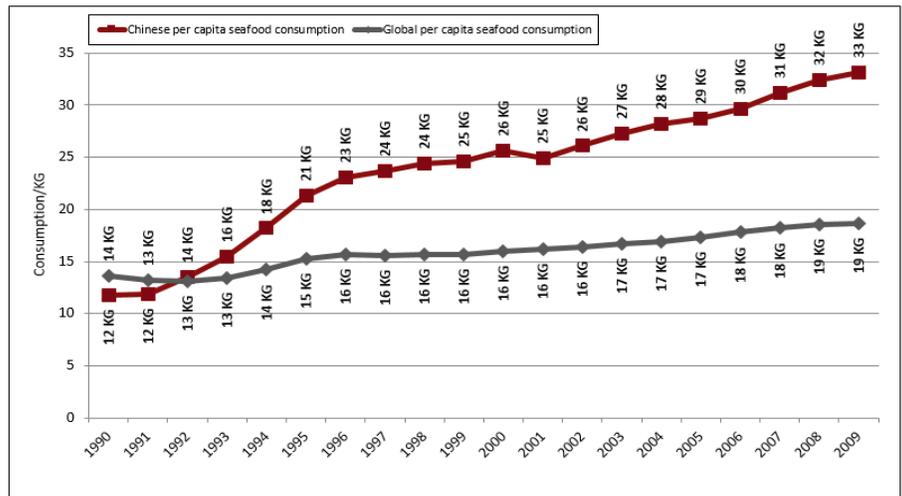
From 1989 to 2013, Chinese GDP grew at an average annualized rate of 9.2%<sup>4</sup>. This rapid rise in GDP has resulted in the emergence of a large middle class, which is estimated at over 300 million people today<sup>vii</sup> and may reach as high as 650 million people by 2015.<sup>viii</sup> Average annual disposable income in China has grown from \$1,351/capita in 2001 to \$5,559/capita in 2011 (Graph 3). Given its celebrated status in Chinese cuisine and social status symbol, seafood is one category of consumption that rises quickly once populations enter the middle class.

China's population is by no means monolithic and there are great disparities in wealth and consumption patterns between China's rural and urban populations. Per capita seafood consumption in China's cities is much higher than in rural areas. For example, residents of Hong Kong consume over 67 kg of seafood per capita each year.

Seafood consumption has grown steadily in both urban and rural areas. From 1990 to 2011, urban Chinese seafood consumption rose from 7.7 kg/capita to 14.6 kg/capita – an increase of over 90%. Over the same period of time, per capita seafood in rural areas grew from 2.1 kg/capita to 5.4 kg/capita, an increase of 152% (Graph 3).

Readers may note the two sources of per capita seafood consumption data referenced here vary significantly. While the FAO data (Graph 2) suggest that average Chinese per capita consumption is higher than 30kg per capita, China's National Statistics Bureau (as references in the USDA Report in Graph 3) puts average per capita urban consumption and rural consumption at just 15 kg and 5kg respectively, implying an average annual per capita seafood consumption of just 10kg. This is clearly a major discrepancy and one that significantly alters the global footprint of China's overall seafood

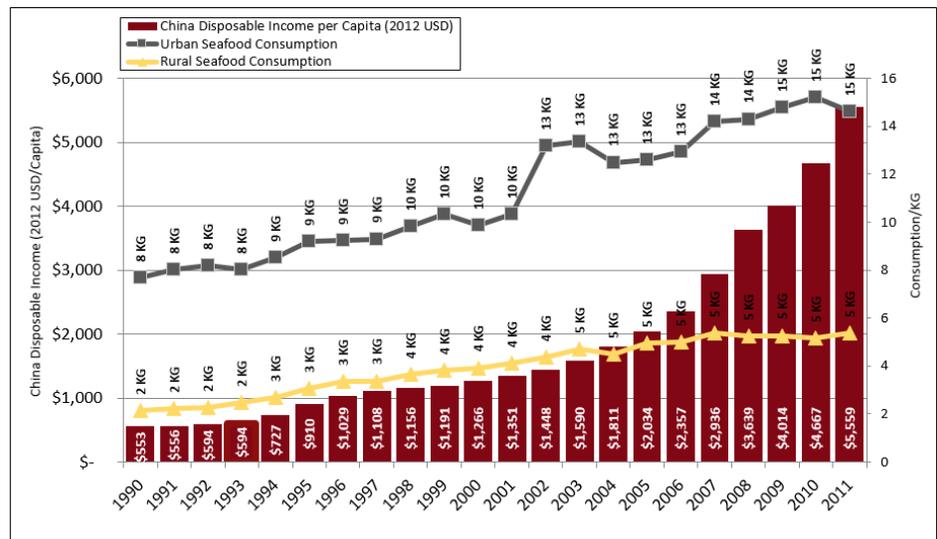
**Graph 2: Chinese Seafood Consumption\* v. Global Seafood Consumption**  
(Per Capita Consumption/KG; 1990-2009)



Source: FAO

\*Includes saltwater and freshwater, wild-caught and farmed products

**Graph 3: Per Capita Disposable Income v. Consumption of Seafood Products**  
(Consumption/KG; 1990-2011)



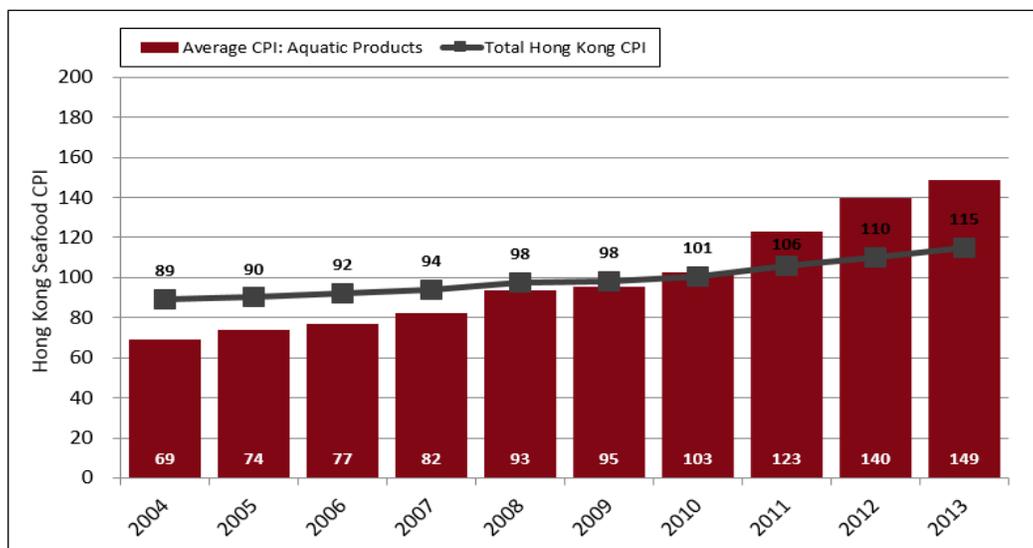
Sources: USDA Economic Research Service; USDA Gain Report: China Fishery Products; World Bank

<sup>4</sup> In comparison, according to World Bank data, the GDP annual growth rate in the developing nations of East Asia the Pacific averaged 8.4% from 1989-2012.

consumption. This discrepancy in absolute values notwithstanding, the trends in Graph 3 clearly reflect the significant differences in rural and urban consumption. Both data sets also agree on one thing: China’s seafood consumption is growing rapidly.

Curiously, this growth in Chinese seafood consumption has taken place despite a marked increase in retail seafood prices, which have been growing at an average annual rate of 5% per year from 2000 to 2011. Seafood prices have grown faster than the broad Chinese consumer price index (CPI) and have outpaced price growth of other food categories such as pork and vegetables.<sup>ix</sup> In Hong Kong, the seafood price gains began to outpace the broad CPI in 2010 and of the entire product basket, ‘seafood products’ was category with the highest change in prices from 2004-2013 (180%)” (Graph 4). There is some evidence that the price gains in this category are driven primarily by increased demand for luxury seafood.<sup>x</sup> However there are also indications that the rise in seafood prices may begin to slow as Chinese GDP growth rates stagnate.<sup>xi</sup>

**Graph 4: Hong Kong Consumer Price Index, by Seafood Category**  
(2004-2013)



Source: Hong Kong Census and Statistics Department

Wholesale seafood prices are rising as well, with prices for marine products increasing at a faster rate than freshwater products. A government survey of 80 major seafood wholesale markets found seafood prices grew 8.5% in 2012 alone.

A recent study of seafood prices in Shanghai revealed that demand for imported seafood has been partly responsible for the increase in prices for certain wild-caught and luxury seafood products. High end products tended to have steeper price increases than did lower value seafood.

While this report focuses on Chinese demand for wild caught seafood, it is important to note that freshwater fish and mollusks, most of which are farmed, represent close to two thirds of all Chinese ‘seafood’ consumption.<sup>xii</sup> In fact, freshwater fish consumption more than doubled from 1990 to 2009, while mollusk consumption quadrupled. Over the past decade, investments in aquaculture have made China into the world’s largest aquaculture producer, accounting for 62% of global aquaculture by volume.<sup>xiii xiv</sup> According to CapLog’s interviews with retailers, Chinese consumers do not commonly differentiate between wild-caught and farm-raised seafood. However, a recent study conducted in Shanghai revealed that prices for wild-caught crab increased five times faster than prices for its farm-raised counterpart, suggesting potential price premiums for wild-caught seafood.<sup>xv</sup>

Chinese seafood consumption patterns also differ by region. Live freshwater fish dominate inland and Northern provinces, marine fish are popularly consumed along the eastern coastal provinces,<sup>xvi</sup> while the wealthy cities of the south are the primary consumers of high value imported seafood products.<sup>xvii</sup> Consumers in the southeastern provinces of Fujian, Shanghai and Zhejiang had the greatest expenditure on seafood products in 2011, spending an average of \$154/capita.<sup>xviii</sup>

Generally speaking, Chinese consumers prefer live or fresh seafood products to processed products,<sup>xix</sup> although it too has a geographical component, as Northern provinces with little access to marine fisheries and an underdeveloped infrastructure typically eat more frozen and processed seafood products.<sup>xx</sup> Within increasingly middle class urban areas, the consumption of ready-to-cook, processed products is also on the rise due to increased ownership of refrigerators and freezers, rising exposure to international cuisines and a greater diversity of processed foods available in supermarkets.<sup>xxi</sup>

Regional seafood notwithstanding, the rise of supermarkets and the cold-chains they rely on has opened many parts of Mainland China's interior to an ever-growing variety of seafood products from both domestic and foreign sources.<sup>xxii, xxiii</sup> Foreign supermarket chains Carrefour (France), Jusco (Japan), Metro (Germany) and Wal-Mart (US), are vying with domestic Chinese supermarket franchises like Wumart, 99 Ranch and Lotte Mart for a share of the estimated \$1.46 trillion food service industry in China.<sup>xxiv</sup>

As more Chinese consumers turn to supermarkets for their staple seafood, traditional wet markets have begun to decline in relevance.<sup>xxv</sup> Some of these supermarket chains are also increasingly acting as distributors, receiving seafood products directly from importers for resale to restaurant chefs and small retail outlets.<sup>xxvi</sup>

Urbanization is a major cultural and economic force in China today. In 1950 fewer than 15% of China's population lived in cities, by 2010, an estimated 45% of Chinese citizens could be found in urban environments. That number is expected to grow to as much as 60% by 2030.<sup>xxvii</sup> As the rural poor move en masse to China's cities searching for improved incomes, they are exposed to new cuisines (both regional and international) and a much more diverse basket of food goods.

Chinese urbanites of all classes increasingly eat their meals outside of the home and the percentage of seafood consumed outside the home rose from 14.7% to 21.5% between 2000 and 2011.<sup>5</sup> Fast food chains have been particularly successful, growing from \$16 million in 1994 to over \$130 million in 2005.<sup>xxviii, xxix</sup> Many international fast food chains have adapted their menu to cater to Chinese tastes for seafood. For example, many KFCs in China serve popular fish burgers, while a diner at a McDonald's in Hong Kong can order a shrimp burger with seaweed flavored fries.<sup>xxx</sup>

While fast food chains serve processed seafood, diners looking for higher value fresh and live seafood often turn to buffet style, hotpot and sushi restaurants, which have also grown in popularity over the past decade.<sup>xxxi</sup>

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<sup>5</sup> Consumption at home amounted to 13.62 million MT in 2011, a significant jump up from 7.83 million MT in 2000. (Source: <http://www.seafoodsource.com/en/news/supply-trade/18903-china-eating-more-seafood-than-it-produces>)

## SPOTLIGHT ON HONG KONG: EVOLVING SEAFOOD CONSUMER TASTES

Hong Kong's seven million consumers are, on average, wealthier, better educated and more cosmopolitan than their Mainland Chinese counterparts. As residents of a city that has both an appreciation for traditional Chinese cuisine and a readiness to accept new market trends, a wide diversity of seafood is consumed in Hong Kong, including dried, fresh and live seafood products in a variety of different product presentations and cuisines. While Hong Kong consumers still generally prefer fresh food (particularly fresh fish, meats and produce), there is growing popularity for frozen and ready-to-cook foods. Hong Kong consumers are also very price-sensitive and increasingly value food safety and nutrition.<sup>xxxii</sup>

Dining out is very popular in Chinese Cantonese culture and individuals and families in Hong Kong often dine out for at least one meal a day, sometimes eating all three of their main meals outside of the home. One frequent seafood diner in Hong Kong observed that dining out is an important social event, and in urban areas like Hong Kong where there are so many restaurant choices it may also be cheaper to dine outside the home. The Hong Kong food service industry is indeed very large and thriving, consisting of about 14,500 restaurants across diverse cuisines (36% are Chinese cuisine, 56% non-Chinese cuisine, and 8% fast food<sup>xxxiii</sup>), 800 hotels and about 14,400 retail outlets.<sup>xxxiv</sup> In 2011, restaurant receipts and food retail sales reaching a combined \$22 billion.<sup>xxxv</sup> In Hong Kong, there is 1 restaurant for every 500 people, and in order to put the sheer number and diversity of Hong Kong dining options into context: the city of New York has around 6,650 restaurants with a ratio of one restaurant for every 1,228 people.<sup>xxxvi</sup>

Hong Kong consumers tend to shop for food daily because of the strong preference for fresh food. While the majority of shopping is still done in traditional wet markets and small family-owned stores, supermarket sales are growing faster than wet market sales. Supermarkets' share of retail sales was over 50% in 2012. The major supermarket chains in Hong Kong include The Wellcome Co. Ltd. (with over 260 outlets), ParknShop (with over 260 outlets), China Resources Vanguard Shops (CRVanguard), Dah Chong Hong (DCH) Food Marts, Jusco and City Super. ParknShop and Wellcome account for about 80% of all supermarket turnovers in Hong Kong. Wet markets have a strong reputation for fresh and live seafood products, while supermarkets are regarded as good sources of frozen, processed, and other value-added canned seafood products. However, competition between the two types of outlets has intensified as supermarkets have begun blending the Western supermarket style with a traditional Hong Kong wet market by providing live and fresh seafood.<sup>xxxvii</sup>

A 2010 online survey of 867 consumers from Hong Kong and southern Mainland China released during the 2010 Asian Seafood Exposition provides a snapshot of each of these aforementioned consumer trends. The survey found that:<sup>xxxviii</sup>

- 89% of respondents reported consuming seafood at least once a week.
- Food safety, freshness and price are key drivers for seafood consumption.
- Older and higher income groups consume seafood more than younger and lower income groups.
- Top seafood preferences are shellfish and live fish (including shrimp, scallops and prawns).
- High-end seafood products, such as lobster and crab, are consumed more often at restaurants than at home. Lower-priced seafood items, such as squid, are generally consumed more at home.<sup>6</sup>
- Among consumers purchasing seafood for at-home consumption, 48% shop at wet markets, 30% buy from specialty seafood shops and 23% buy their seafood from supermarkets.

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<sup>6</sup> In addition to price drivers, high-end seafood products like lobster are more commonly consumed in restaurants versus at home because they are more difficult to prepare.

## b) Luxury seafood in China

The consumption of luxury seafood is deeply ingrained in Chinese culture and many seafood items are consumed for reasons beyond their taste and nutritional value alone. Tradition, social status and perceived health benefits all play a role in defining the Chinese diet.

Traditional Chinese Medicine (TCM) relies on herbal treatments, body work (e.g., acupuncture, tai chi) and healing foods as a means of achieving harmony between the body's opposite and complementary forces, *Yin* (陰, 'shady side') and *Yang* (陽, 'sunny side'), and maintaining the body's vital energy, or *Qi* (氣, 'air').<sup>xxxix</sup>

"They are called the four treasures of Chinese cuisine – swim bladder, shark fin, sea cucumber, and abalone. They are a must-have for all luxurious Chinese banquets. It's a necessity when treating guests."  
- Hong Kong Restaurant Owner

Food therapy, or the use of foods for healing purposes, has played a role in TCM for centuries. One of the earliest texts on the role of healing foods was *Qi Min Yao Shu* (齊民要術 or 'main techniques for the welfare of the people'), written during the late Wei dynasty (386 – 534 A.D.).<sup>xi</sup> Luxury seafood species are also commonly thought to be *bu* (補, 'supplement'), a food that provides a health benefit to the consumer.<sup>xii</sup> Notably, wild foods are also considered to be more *bu* than non-wild foods, which is illustrated in the Chinese consumer preference for wild-caught, rare seafood from pristine waters.<sup>xiii</sup>

Today many TCM practitioners recommend that patients include specific dried seafood products (*hai wei*, 海味) as a compliment to their treatment. These recommendations are both grounded in measurable nutritional value and for perceived health benefits, such as joint repair, skin rejuvenation and increased sexual vigor.

## THE MEDICINAL PROPERTIES OF LUXURY SEAFOOD PRODUCTS

Several of the luxury focus species in this report are considered one of the ‘Eight Treasures of the Sea,’ (*hai ba zhen*, 海八珍) or foods that are thought to have powerful medicinal properties. The ‘eight treasures’ are: bird’s nest, shark fin, sea cucumber, swim bladder (fish maw), fish bone, abalone, seal and Chinese giant salamander.<sup>xliii</sup>

This feature highlights common food therapy uses for some of this report’s luxury species, according to a student of TCM.

### Sea cucumber<sup>xliv</sup>

Sea cucumber is often called *hai shen* (海參) in China, which translates to ‘ginseng of the sea,’ due to their perceived value in food therapy. Sea cucumber has been crowned the “king of medicinal food” (*shi zhong yao wang*, 食中藥王). Sea cucumber is considered a very healthful food because it is rich in protein, but low in fat and cholesterol. It is usually braised and stir-fried with other seafood or vegetables. According to ancient Chinese literature, sea cucumber can replenish one’s *Qi* and nourish internal organs, especially improving kidney and reproductive organ function. It is commonly believed that patients with inflammation, tumor cells, or poor immune system would benefit from the consumption of sea cucumber. TCM practitioners also recommend sea cucumber for pregnant women, as they believe that the protein and collagen found in the animal are good for the fetus and will increase the chances of having a smooth, natural delivery.<sup>xlv</sup>



### Shark fin<sup>xlvi</sup>

Shark fin, known as *yu chi* (魚翅, ‘fish wing’) in China, is one of the most valuable food therapy remedies.<sup>xlvii</sup> It has been considered a delicacy since the Sung dynasty (960-1279 AD) and is now a traditional dish served at most formal banquets.<sup>xlviii</sup> Shark fin is most commonly consumed in soup, but it is also used in dim sum and other dishes in small quantities. Common perceptions of the health benefits of shark fin include: improved function of the five internal organs (heart, liver, spleen, lung, and kidney), increased upper body strength, stronger appetite, better digestion, and a stronger immune system. Because it is rich in natural collagen, shark fin is also commonly viewed as a way of improving skin and skeletal health.<sup>xlix</sup>



### Swim bladder<sup>l</sup>

Processed swim bladders are also known as fish maw (*hua jiao*, 花膠), which literally translates as ‘collagen’. Fish maw has been a delicacy since ancient Chinese times, and was documented in the *Qi Min Yao Shu* during the late Wei dynasty (386 – 534 A.D.). In modern times it is considered as one of the “four major supplemental foods.” It is very popular among the health conscious population, and is usually consumed braised, stir-fried or in soup. According to one practitioner of TCM, fish maw is a great supplemental food because it is “mild” in nature: it is nutritious but does not “dry” one’s body. Among the perceived health benefits of consuming fish maw are improved kidney and stomach function, the facilitation of blood cell generation and increased immune function. It is often



recommended for people with chronic fatigue, poor immunity and anemia. It is also very popular among women because collagen is perceived as improving skin condition and elasticity.<sup>li</sup>

### Abalone<sup>lii</sup>

Abalone has been considered a noble food since ancient times, and was also first documented in the *Qi Min Yao Shu* during the late Wei dynasty (386 – 534 A.D.). It is popular in the Chinese culture because it is fleshy, rich in flavor and has a high nutritional value. They are usually consumed whole or sliced in stir-fry or braised items. Abalone contains most of the essential amino acids that one's body needs; thus consuming abalone can ensure one's immune system functions properly. Some practitioners of TCM believe that abalone can fight and prevent cancer cells, lower blood lipids, lower blood pressure and improve liver, kidney and reproductive health. Its shell is also a famous Chinese medicine called *Shi Juiming*, (石决明) which is commonly thought to treat, cleanse and improve liver function and to improve eyesight or eye-related diseases.<sup>liii</sup>



### Seahorse<sup>liv</sup>

Seahorse is also known as the “ginseng of the south” (*nan fang ren shen*, 南方人蔘). They are considered a remedy for improving kidney function and erectile dysfunction in TCM. In food therapy, it is grounded into powder and consumed with wine or food to improve kidney function, reproductive system function and blood circulation.<sup>lv</sup>



### Geoduck<sup>lvi</sup>

While not a part of TCM food therapy due to its relatively recent introduction to Chinese cuisine, the geoduck is popularly perceived as having health benefits. Geoduck is usually thinly sliced and consumed as sashimi, stir-fry or hotpot item. According to one organization dedicated to promoting healthy living, geoduck is rich in protein that helps maintain a healthy immune system. Additionally, geoduck is reported to have nutrients that increase metabolism, leading to reduced inflammation, blood circulation and water accumulation.<sup>lvii</sup>



There is common phrase in Chinese (以形補形) that means one should use something that is similar in shape to nourish a specific organ; for example, one should consume walnuts to enhance brain function. After this fashion, the exaggerated phallic appearance of the geoduck contributes to the belief that geoduck can improve one's reproductive function. Specifically, geoduck is believed to act as an aphrodisiac and increase the mobility of the sperm.<sup>lviii</sup>

Luxury seafood also plays an instrumental role in celebratory banquets or special occasions such as weddings, birthdays and important business or government events. In Chinese culture, lavish dinners help friends, family and associates establish and maintain *guanxi* (關係, 'relationship'), which is an essential component of social life and business success in China.<sup>lix</sup> With recent rises economic prosperity, spending on celebratory banquets appears to have reached a zenith. A recent study estimates that Chinese government officials spent as much as \$100 billion on banquets in 2011, while the Chinese public spent over \$55 billion on weddings.<sup>lx</sup>

This seemingly profligate government spending on banquets triggered a rare public outcry that the government has forcefully addressed through a frugality campaign (see Section 5.1). Initial reports suggest that the demand for many of these luxury seafood products has begun to wane. That said, if the Chinese middle class and nouveau riche continue to celebrate their newfound prosperity with the dual symbols of status and salubrity, demand for

luxury seafood in China will continue to grow as long as the economy does.

### **3.2 China's Ability to Meet its Seafood Demand**

- *Total Chinese seafood production has been rising, reaching an estimated 58.7 million MT in 2013 and predicted to account for well over one-third of global seafood production by 2030. Rapidly growing aquaculture is driving the increased production, while wild-caught seafood production has stalled due to over-exploitation of its domestic waters and government limits on fishing.*
- *China is the largest seafood exporter worldwide, and is also a net exporter of seafood for human consumption. At the same time, China's seafood imports have been rising in order to meet demands for the seafood processing (and re-export) industry as well as domestic seafood consumption. China has the potential to quadruple its seafood imports to \$20 billion by 2020.*

#### **a) China's Seafood Production**

Over the past decade, China's seafood production (both marine capture and aquaculture) grew by over 60% to reach an estimated 58.7 million MT in 2013, making it the world's largest seafood producer.<sup>lxi</sup> By 2030 the FAO estimates that Chinese seafood production will account for 37% of total global production.<sup>lxix</sup>

Aquaculture accounts for 72% of China's seafood production. While total marine capture landings have remained relatively constant over the last ten years, aquaculture production has more than doubled to 42.8 million MT in 2013.<sup>lxiv</sup> The FAO projects that by 2022, nearly four fifths of China's seafood production will be farmed.<sup>lxv lxvi</sup>

The dominance of Chinese aquaculture can be largely attributed to the "Zero Growth of Capture Fishing Policy" introduced by the Fisheries Management Bureau of China (FMB) in 1999. This policy was modified to a "negative growth" policy in 2000. As the name implies, the main objective of the policy was to shrink China's wild-capture fisheries sector.<sup>lxvii</sup> The main species of the South China Sea – Japanese seerfish, eel and yellow croaker – have all reached levels of overexploitation. Many blame years of unregulated fishing and pollution for the collapse of these fisheries and the decline of many others around the country.<sup>lxviii</sup> By attempting to ease pressure on domestic marine resources with the implementation of the zero growth policy, government attention has turned towards the development and promotion of aquaculture through subsidies and government programs.

China has also aggressively sought seafood supply from foreign waters through the expansion of its deep-sea fleet and fishing agreements with other countries.<sup>7</sup> In the first quarter of 2013 China added 1,395 boats to its fleet and signed several fishing contracts with other nations. China's fleet is active in the Exclusive Economic Zones (EEZs) of 93 countries, plus Antarctica, making it one of the largest fishing fleets in the world. In recent years, the focus of China has shifted towards developing nations, where its fishing agreements are often accompanied by cheap loans and development projects for the partner countries.<sup>lxix</sup>

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<sup>7</sup> In addition, Chinese investors have purchased large shares of foreign fisheries and processing plants. One such example is Copeinca, one of the largest and most profitable fish oil companies in Peru, which was fully acquired by China Fishery Group in March 2014. The company is also the subsidiary of Pacific Andes Corporation, based in Hong Kong and partly owned by the Chinese government. Together the two companies own the highest share of Peru's fishing quotas and are one of the largest fishmeal producers in the world. (Source: RTT News. "China Fishery Group Acquires Remaining Shares in Copeinca. <http://www.rttnews.com/2287809/china-fishery-group-acquires-remaining-shares-in-copeinca-quick-facts.aspx>. March 2014.)

Growth in China's seafood consumption is keeping pace with domestic production. Domestic production – both from marine capture fisheries as well as aquaculture – grew at an average annual rate of 5% from 2000 to 2013,<sup>lx</sup> while Chinese seafood consumption grew at an annual rate of 4%. In 2012 China consumed an equivalent of 90% of its total output. Going forward China will likely rely heavily on domestic aquaculture and seafood imports to meet its growing seafood demand.<sup>8</sup>

#### **CHINESE LUXURY SEAFOOD DEMAND AND THE DEVELOPING TROPICS: A CASE STUDY**

The impact of China's demand for luxury seafood impacts coastal communities worldwide and, particularly those in the developing tropics where many of the most highly valued species are found. Chinese demand for sea cucumber, estimated at 10,000 tons a year, has led traders to search the world for new harvest areas. Recent research demonstrates that sea cucumber fishing operations have expanded into more than 70 countries, with intense fishing occurring in many developing regions, severely impacting the health of wild populations. Fully 20% of the sea cucumber fisheries have been depleted worldwide. Costa Rica, Ecuador, India and eight other countries have had sea cucumber population numbers drop so low that further harvesting has been banned. Even national marine protected areas such as the Great Barrier Reef and Galapagos Islands National Park have not gone unscathed, with cucumber populations being poached into over-exploited status.

Sierra Leone's Banana Island is one example of the environmental toll that China's demand for luxury seafood has had. Prior to the arrival of Chinese traders in 2010, sea cucumber did not mean much to the islanders. With hopes of increased income and community development, many fishermen turned to diving for sea cucumber to supplement their meager earnings. Fast forward four years and the sea cucumber trade has benefitted very few. One fisherman exclaimed, "They just used us and dumped us like rubbish." Many are left questioning where the money has gone and what has happened to the resource. With no knowledge of the growth rate or current stock and speculation of dwindling supply, the future remains uncertain.

Chinese demand, paired with an abundant local supply, does not necessarily equate to wealth and prosperity. Chinese demand for high value species like sea cucumber can bring opportunity and income, but as the Chinese proverb warns: "Things turn into their opposites when they reach extremes" (*wù jí bì fǎn*, 物极必反).

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<sup>8</sup> Perhaps ironically, China is a net exporter of seafood because the country is a major processor and re-exporter of seafood products (see the Feature, "China is the World's Largest Seafood Processor") and also uses imported low-value seafood products to produce and export higher value aquaculture products (see the Feature, "The Relationship Between Chinese Aquaculture and Mexican Wild-Caught Fisheries." Specifically, according to the USDA GAIN Report, "China – Fishery Products Annual" (Dec 2012), China's total seafood import value was projected to be \$5.7 billion, and seafood export value projected to be \$18.5 billion in 2012.

**b) China's seafood imports**

In terms of volume, China is both the world's largest exporter and the world's third largest importer of seafood.<sup>9</sup> China's global seafood imports have risen by 63% from 2000 to 2011, reaching four million MT in 2011.<sup>lxxi</sup>

China ranks sixth in seafood import value with \$5.5 billion in seafood imports in 2012.<sup>lxxii10</sup> Russia was the leading supplier of seafood to China, providing roughly a quarter of all of China's seafood imports. The US (21%), Norway (6.7%) and Canada (6.6%) are China's other major seafood suppliers.<sup>lxxiii</sup> According to a recent Rabobank report, China has the potential to quadruple its seafood imports by 2020.

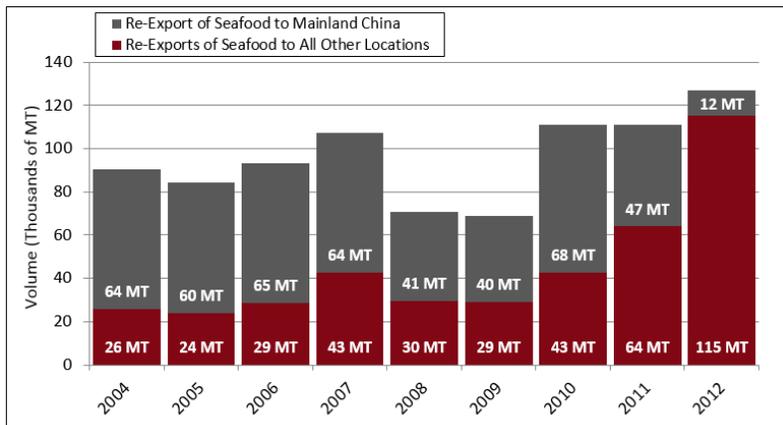
Much of China's increased seafood imports are driven by the re-export industry, which imports seafood from countries with high labor costs and processes it for re-export, sometimes to the very country where that product originated.<sup>lxxiv</sup> As much as 60-75% of China's frozen fish<sup>lxxv</sup> imports were destined for re-export.

**Alaskan Salmon Processed in China and Re-Exported to US**



Chinese industry and official sources claim that China is becoming the global processing center for much of the world's salmon and whitefish.<sup>lxxvi</sup> In 2012 roughly a third of China's total seafood exports were caught elsewhere and processed for export in China. The northeastern cities of Qingdao and Dalian are considered the hubs of China's seafood processing industry and the primary destinations for their processed products are the United States and Europe.<sup>lxxvii</sup> Over the last decade, Chinese whitefish processors have more than doubled their exports to the US and EU.<sup>lxxviii</sup> While the processing industry grew to meet the demands of export nations, seafood processed in China's northeast is increasingly popular in Mainland China.<sup>lxxix</sup>

**Graph 5: Hong Kong Seafood Re-Exports to Mainland China v. Total Seafood Re-Exports**  
(Thousands of MT; 2004-2012)



Source: Hong Kong Census and Statistics Department

Over 95% of the seafood consumed Hong Kong each year is imported. The volume and value of seafood imports into Hong Kong have been steadily rising, reaching close to 350,000 MT and \$3.2 billion in 2013.<sup>lxxx</sup> Hong Kong imports most of its seafood from China (24%) and Japan (14%), followed by Australia (7%) and the US (6%).

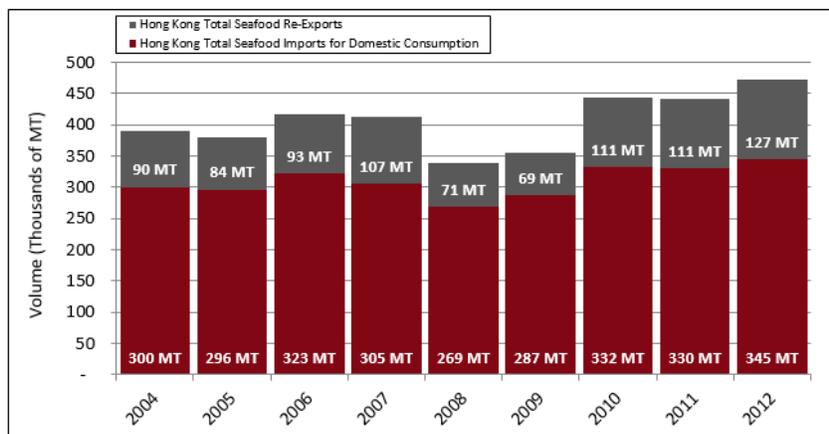
<sup>9</sup> China is a net importer of seafood if fishmeal is taken into account (Source: 2014 FAO report, "The State of World Fisheries and Aquaculture: Opportunities and Challenges")

<sup>10</sup> According to UN Comtrade data, the total import volume was estimated to be 2.6 million MT in 2012, down 4% from the previous year.

There is also a thriving re-export market in Hong Kong, and from 2004-2011, nearly a third of its seafood imports were re-exported.<sup>lxxxix</sup> The destination countries for Hong Kong's seafood re-exports have evolved over time. In 2004 the top re-export destinations were China, the US, Taiwan, Vietnam, and Canada. In 2013 the top re-export destinations were Vietnam, Taiwan, China, Korea and Macau.<sup>lxxxix</sup>

At its peak in 2012, the volume of re-exports from Hong Kong to all global destinations was 126.8 million MT, representing sales of \$721.2 million<sup>11</sup> (Graph 6). Roughly 15% of these re-exports<sup>11</sup> were destined for Mainland China between 2004 and 2011. The greatest proportion of re-export to Mainland China occurred in 2005, when 72% of Hong Kong's re-exports (or 60.4 million MT) were destined for China.

**Graph 6: Hong Kong's Seafood Imports for Domestic Consumption v. Seafood Re-Exports**  
(Thousands of MT; 2004-2012)



Source: Hong Kong Census and Statistics Department

#### THE RELATIONSHIP BETWEEN CHINESE AQUACULTURE AND MEXICAN WILD-CAUGHT FISHERIES

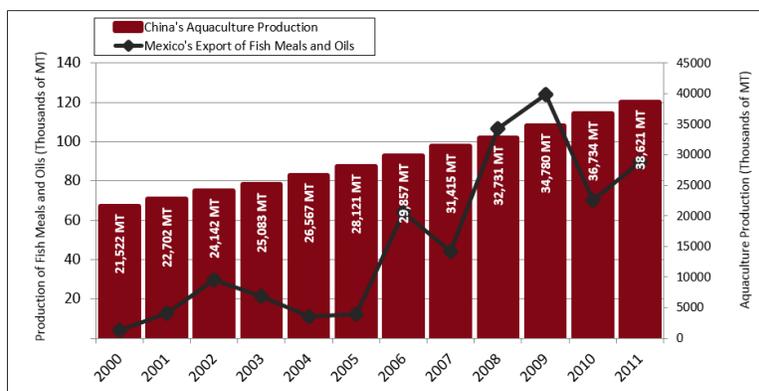
Aquaculture production is one of the fastest growing food production industries worldwide and China is the world's leading fish farmer. From 2000 to 2013, China's aquaculture production nearly doubled and in 2011 China accounted for 62% of total global aquaculture by volume.<sup>lxxxiii</sup> China's fish farms rely on a steady supply of fish oils and fishmeals from wild caught fisheries to supplement the diet of the farm-raised animals. In 2010, 73% of global fishmeal production was destined for aquaculture use, up from just 10% in 1980.<sup>lxxxiv</sup>

Mexico's exports of fishmeals and oils have grown exponentially in recent years. In 2000 Mexico exported just over 4,000 MT of fishmeals and oils, making up fewer than 2.5% of all Mexican seafood exports by weight. Just nine years later, Mexico exported nearly 125,000 MT of fishmeals and oils, making up roughly 43% of Mexico's total seafood exports by weight. Between 2011 and August of 2012, Mexico's export of fishmeals quadrupled and oils grew by a factor of eight, with combined exports of 672,000 MT.

China is the largest market for Mexico's fishmeal exports, and the rise in Mexico's exports of fishmeal and oils to China follows China's rising aquaculture production (Graph 7). In 2012, 75% of Mexico's fishmeal exports were destined for China and Taiwan. The principal destinations for Mexican fish oil are the European Union and the United States, together accounting for 92% of total exports.<sup>lxxxv</sup>

<sup>11</sup> In 2013, the total value of re-exports rose to \$949 million (the greatest amount recorded), even though the volume dropped to just 10%, or 2 million MT. The precise reason as to why the total value would be so high despite the low volume has not been determined.

**Graph 7: China's Aquaculture Production v. Mexico's Export of Fishmeal and Oils to All Destinations\***  
(Thousands of MT, 2000-2011)



Sources: FAO; FAO-OECD Agricultural Outlook

\*Data regarding the trade of fishmeal and oils between Mexico and China was not available in the FAOSTAT database

But there is a much more complex relationship between Mexico's wild-capture fisheries and China's aquaculture farms. Despite consuming 34% of global fish production, China is a net exporter of fish and is exporting large quantities of farmed fish back to Mexico. According to one wholesaler at the Nueva Viga fish market, the influx of Chinese tilapia (*Oreochromis niloticus*) and basa (*Pangasius bocourti*) over the past three years has exerted downward pressure on prices for wild caught fish in Mexico City. Furthermore, as the prices of wild caught fish in Mexico decline, Chinese traders on the hunt for well-priced seafood are able to purchase Mexican fish at a lower price.

While further analysis is certainly needed, it seems as if Mexico is exporting its fishmeal to China, where it is used to grow tilapia and basa, which in turn are exported back to Mexico. This inexpensive supply of farm-raised fish from China depresses prices for wild caught fish in Mexico, giving global (including Chinese) seafood buyers access to cheaper wild caught seafood.

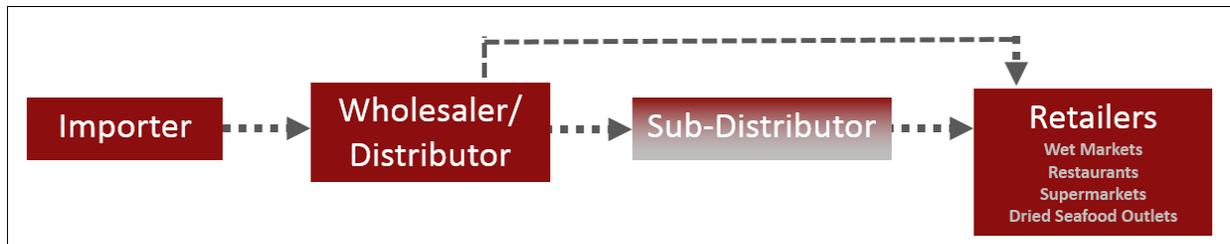
### 3.3 Major Seafood Market Channels in China

- Seafood distribution in China is highly fragmented, with many actors purveying live, fresh, frozen and processed seafood along a complicated supply chain.
- Mainland China generally sources its seafood from the coastal cities of Shenzhen and Guangzhou (in the southeast region), Shanghai (in the central eastern region), and Qingdao and Dalian (in the northeast region), as well as the neighboring island of Hong Kong.
- Hong Kong is a major trade channel for seafood imports into China because of its central location, developed port and distribution infrastructure, free port status and the use of English. Nearly a third of all seafood products imported into Hong Kong from 2004-2011 were re-exported to other destinations. About half of Hong Kong's re-exports were destined for Mainland China during this time period.
- While seafood products of Mexican origin make up a very small percentage of the total volume of seafood products re-exported from Hong Kong, nearly all of Mexico's seafood exports to Hong Kong are re-exported to Mainland China.

#### a) Seafood import and distribution channels in China

The number and diversity of actors that channel seafood to China's 1.35 billion consumers is staggering. Generally speaking however, the import and distribution of seafood in China for domestic consumption flows along the following path, and there is typically little difference between the distribution channels of live, fresh, frozen and processed seafood products (Figure 1).

Figure 1: Simplified Chinese Live and Frozen Seafood Supply Chain for Domestic Consumption



Most seafood in Mainland China is imported through the coastal cities of Shenzhen and Guangzhou (in the southeast region), Shanghai (in the central eastern region) and Qingdao and Dalian (in the northeast region). The island of Hong Kong also serves as a major seafood trade route into Mainland China. With the exception of Dalian, each of these Chinese cities ranks in the top 10 ports in the world for container volume.<sup>12</sup>

The northeastern ports of Qingdao and Dalian together accounted for about 80% of the total Chinese import volume in 2012.<sup>12</sup> Most *live* seafood imports (as much as 80%) arrive in Shenzhen, which is located just north of Hong Kong.<sup>12</sup> Guangzhou is also a major center for live seafood imports. In addition to well-developed distribution and storage infrastructure, these cities – especially Qingdao and Dalian – contain a large number of processing facilities. Of the total 9,611 seafood processing facilities in China, 6,413 (or 67%) are located in Zhejiang, Shandong, Fujian, and Guangdong provinces (Shandong has the largest processing capacity at 7.9 million MT per year followed by Fujian at 3.3 million MT).<sup>12</sup> These provinces are also equipped with port and cold storage

<sup>12</sup> Shanghai was the largest container port by volume worldwide in 2012, Hong Kong the 3<sup>rd</sup>, Shenzhen the 4<sup>th</sup>, Guangzhou the 7<sup>th</sup> and Qingdao the 8<sup>th</sup>. (Source: <http://www.worldshipping.org/about-the-industry/global-trade/top-50-world-container-ports>)

facilities and are major aquaculture producers.<sup>lxxxix</sup> [See the Feature, “China is the World’s Largest Seafood Processing Center” below].

Wholesale seafood markets are a core component of seafood distribution in China and there are roughly 340 live seafood markets across China through which fish brokers facilitate transactions between wholesalers and retailers in rented booths.<sup>xc</sup> The principal wholesale markets are:<sup>xc</sup>

- *Shenzhen: Yantian Seafood Market.* Most live seafood imports entering China pass through this market. Importers in Shenzhen dominate many of the seafood import and distribution channels throughout China and distribution networks have been developed from Shenzhen to major cities such as Shanghai and Beijing. More than half of the seafood entering Shenzhen is then sent to Guangzhou for distribution throughout China.<sup>xcii</sup>
- *Guangzhou: Huangsha Seafood Wholesale Market.* As one of China’s largest seafood markets, both domestic and imported seafood products in all presentations (e.g., live, chilled, and frozen) pass through Huangsha.<sup>13</sup> Guangzhou also has the third largest air transport hub in China after Beijing and Shanghai.<sup>xciii</sup>
- *Shanghai: Tongchuan Lu Seafood Market:* Open 24 hours, seven days a week and housing 700 booths, Tongchuan Lu is Shanghai’s largest seafood market. Several hundred categories of diverse domestic and imported seafood products are sold in the market, and it is one of the major distribution centers of high-end seafood for China’s wealthiest city.<sup>xciv</sup>
- *Hong Kong: Aberdeen Wholesale Market:* The largest of seven wholesale seafood markets in Hong Kong, Aberdeen has 33 separate vendor stalls in which both live and fresh fish are sold. Roughly 30 MT of fresh fish and 50 MT of live fish pass through the Aberdeen market on an average day.<sup>xcv</sup>

Distributors and sub-distributors at wholesale markets import and warehouse fish prior to distribution. Distributors usually sell for cash and may supply products to sub-distributors (smaller wholesalers) or directly to hotels, restaurants and supermarkets. Sub-distributors sell seafood to hotels, restaurants and supermarkets, and are usually more flexible with payment than distributors and have the ability to give credit. In general, seafood distribution is very competitive and highly-fragmented in China, being dominated by many small players.<sup>xcvi</sup>

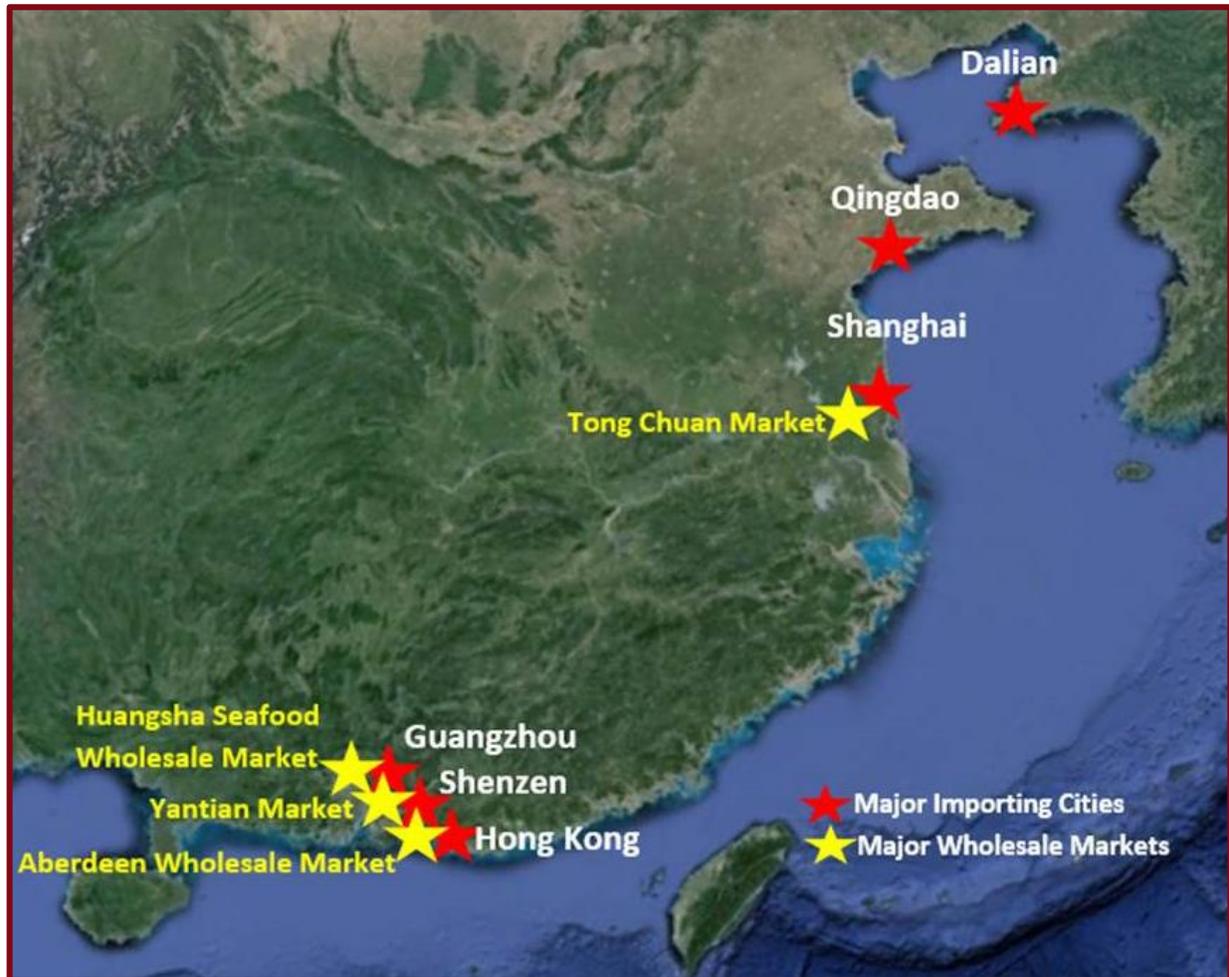
Modernized infrastructure, the emergence of supermarkets, the growing high-end hospitality sector and a number of other factors are responsible for many innovations in the seafood distribution chain in China. Recent innovations include direct sourcing from importers and the establishment of high-end, specialty-focused distributors and sub-distributors.<sup>xcvii</sup>

Large hotels, restaurant chains and supermarkets are also becoming increasingly powerful actors and are reshaping the Chinese seafood supply chain. Whereas smaller restaurants and hotels purchase seafood directly from a wholesaler, or place orders for regular delivery, larger retail outlets tend to make large orders on a monthly basis from distributors and may even purchase seafood products directly from importers.<sup>xcviii</sup> These larger retail outlets often exert enough market influence that they offer payment terms instead of cash, a major shift in the traditionally cash-based industry.

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<sup>13</sup> The Guangzhou Huangsha wholesale market is the largest live and high-end seafood market of its kind in all of Mainland China. According to FAS/Guangzhou, Huangsha operates round-the-clock year round and generates \$3.17 million in daily sales. Huangsha houses around 300 companies, with 90% of these dealing in the sales of live seafood. (<https://www.foodexport.org/Resources/CountryProfileDetail.cfm?ItemNumber=2587>)

Map 1: Major Chinese Cities and Wholesale Seafood Markets



#### b) Hong Kong as a seafood trade hub

Historically, Hong Kong has been a major trade channel for seafood into China because of its central location, developed port and distribution infrastructure, free port status and the use of English as the language of business. Hong Kong has been a Special Administrative region of the People's Republic of China since 1997 and is governed under the "one country, two systems" principle that allows for a high degree of autonomy.<sup>xci</sup> As a result, all of Hong Kong's food safety and import laws are completely independent from Mainland China's regulatory system.<sup>14</sup> In contrast to Mainland China's high tariffs on seafood imports (a duty plus value-added tax nearing 25%), seafood products can be imported to Hong Kong tariff-free.

Hong Kong and Mainland China signed a free trade agreement in 2003 - the Closer Economic Partnership Agreement (CEPA) - which allows all products "of Hong Kong origin" to enter Mainland China tariff-free. According to CEPA, any seafood products that undergo "substantial transformation" in Hong Kong become products of Hong Kong origin and therefore qualify for zero-tariff entry into Mainland China.<sup>c</sup> For example, Mexican shark fin that is imported into Hong Kong and then processed (e.g., dried and packaged) would be considered a product of Hong

<sup>14</sup> In contrast to Mainland China, Hong Kong does not currently mandate that health certificates accompany seafood imports into Hong Kong.

Kong origin and could flow into China tariff-free. In contrast, if the same shark fin was imported directly into Mainland China – or indirectly through Hong Kong, without additional processing – a tariff would be levied upon the shark fin’s entry into Mainland China.

In sum, seafood products that are first imported into Hong Kong may follow one of three paths into Mainland China: (1) unprocessed and re-exported (with payment of Chinese tariff); (2) unprocessed and illegally re-exported through a gray channel (Chinese tariff avoided); or (3) processed (‘substantially transformed’) and legally re-exported to Mainland China (no tariff required).

#### **HONG KONG SEAFOOD RE-EXPORTS TO MAINLAND CHINA OF MEXICAN ORIGIN**

According to official data from the Hong Kong Bureau of Trade Statistics, most (98% in 2011) of Mexico’s exports to Hong Kong are ultimately destined for the Mainland Chinese market. These seafood products include sea cucumber, dried fish, abalone, mollusks and aquatic invertebrates, shark fins, lobster, squid, oysters, clams and various product categories classified as “other.”<sup>ci</sup> At its peak over 10,000 MT of seafood products of Mexican origin were re-exported to Mainland China, representing \$14.1 million in value. In 2013 Hong Kong’s re-exports of Mexican seafood fell to 146 MT, but the value of that trade increased to \$16.8 million.<sup>cii</sup> This may indicate a shift towards higher value luxury products.

But not all Mexican seafood exports take the most direct route to Hong Kong. Two Mexican products in particular – shark fin and sea cucumber – have historically travelled through several diverse trade channels before reaching Hong Kong. Over the past decade, Mexican shark fin have passed through at least eight distinct countries en route to Hong Kong (US, Canada, Mainland China, Macao, Costa Rica, Taiwan, Japan and Singapore), Mexican Sea cucumber traveled through 12 (US, Taiwan, Japan, Canada, Korea, Australasia, Peru, Macau, Singapore, Mainland China, Nicaragua and the Solomon Islands) before ultimately reaching Hong Kong.<sup>15</sup>

### 3.4 Hong Kong and Luxury Seafood Demand

**NOTE:** The Chinese government either does not track or does not make publically available data concerning luxury seafood imports and consumption. In order to understand historic trends in seafood consumption from a quantitative standpoint, CapLog selected Hong Kong as a proxy for Mainland China, using data provided by the Hong Kong Customs and Statistics Department and information gathered from on-site visits to over 50 wholesale, retail and food service outlets in Hong Kong. Hong Kong is wealthier, more cosmopolitan and its citizens consume more seafood than residents of Mainland China, so it is far from a perfect proxy. That said, Hong Kong is a historical hub of the Chinese luxury seafood trade and an in-depth analysis of trends in Hong Kong can surely shed light on luxury seafood consumption in Mainland China.

- *The volume and value of luxury seafood products imported into Hong Kong have risen over the last ten years. But there is significant variability from year-to-year in terms of both the volume and value of imports by specific luxury seafood product.*
- *Luxury seafood products are purchased and consumed in a variety of outlets in Hong Kong, including wholesale and neighborhood wet markets, supermarkets, dried seafood outlets and restaurants.*
- *In Hong Kong, luxury seafood species can be found at a wide variety of prices points.*
- *Freshness, food safety, quality and size are the primary factors that drive price for luxury seafood products.*
- *Several luxury products command a price premium associated with country of origin.*

#### a) Hong Kong's luxury seafood imports

Hong Kong is both an important commercial hub for luxury seafood in China and a major consumer of seafood in its own right.<sup>16</sup> While there has been significant year to year variability in the volume and value of Hong Kong's luxury seafood imports over the past ten years, the overall trend shows that the value of imports has grown in nearly all

**Table 1: Summary of Changes in Hong Kong Imports of Luxury Focus Species**  
(MT; 2012 USD/KG; 2012 USD; 2004-2013)

SPECIES	AVERAGE VOLUME (MT)	% Δ in Volume (2005-2008 v. 2009-2012)	AVERAGE PRICE (\$/KG)	% Δ in Price (2005-2008 v. 2009-2012)	AVERAGE VALUE	% Δ in Value (2005-2008 v. 2009-2012)	Data Availability
Sea Cucumber	5,692	42%	\$ 45.82	30%	\$261,927,567	81%	2004-2013
Geoduck*	1,308	183%	\$ 9.85	-20%	\$ 11,580,040	87%	2007-2013
Shark Fin	8,146	-40%	\$ 33.24	1%	\$263,708,064	-44%	2004-2013
Swim Bladder**	2,438	14%	\$ 76.64	17%	\$187,823,243	33%	2011-2012
Yellow Croaker	2,198	157%	\$ 8.43	-83%	\$ 38,193,894	-88%	2006-2012
Crab	8,093	17%	\$ 6.62	42%	\$ 54,313,856	67%	2004-2013
Octopus	1,284	85%	\$ 5.15	-26%	\$ 6,310,206	36%	2004-2013
Sea Urchin	193	-17%	\$ 20.30	63%	\$ 3,839,097	36%	2011-2012
Jellyfish	924	-31%	\$ 1.84	-12%	\$ 1,717,000	-39%	2011-2012
Abalone	2,494	29%	\$ 70.80	-21%	\$172,456,405	1%	2004-2013
Sea Horses	10	-57%	\$ 268.67	160%	\$ 1,744,112	2%	2004-2013
Lobsters and Sea Crawfish	8,716	8%	\$ 22.44	0%	\$205,273,494	9%	2004-2013

Source: Hong Kong Customs and Statistics Department

\*Geoduck does not have its own product specification and is grouped into the larger category 'clams, cockles and ark shells'

\*\*Swim bladder does not have its own product specification and is grouped into the larger category 'fish heads,

categories. Geoduck, yellow croaker, octopus and sea cucumber are the categories that saw the largest rise in volume, while the import volumes of shark fin, seahorse, jellyfish and sea urchin all declined. Despite increased imports of yellow croaker, a drop in croaker prices led to an overall decline in the value of Hong Kong's croaker

imports. Shark fin imports, which have been the target of public awareness campaigns, experienced a decline in import volume, potentially reflecting reduced consumption in Hong Kong, or could reflect a shifting of the trade to Mainland China.

*Appendix C contains an in-depth analysis of historic trends Hong Kong’s luxury seafood imports.*

Hong Kong imports luxury seafood from a variety of trading partners. The following table ranks the top ten suppliers of select luxury species to Hong Kong.

**Table 2: Top Suppliers of Luxury Seafood to Hong Kong, by Volume  
(2004-2013)**

#	Sea Cucumber	Shark Fin	Yellow Croaker	Fish Heads, Tails and Maws	Abalone	Seahorse	Jellyfish	Sea Urchin
1	JAPAN	SPAIN	CHINA	BRAZIL	AUSTRALIA	THAILAND	CHINA	CHILE
2	INDONESIA	SINGAPORE	JAPAN	CHINA	SOUTH AFRICA	GUINEA	JAPAN	CANADA
3	PHILIPPINES	TAIWAN	INDONESIA	TANZANIA	CHINA	PHILIPPINES	MALAYSIA	SINGAPORE
4	PAPUA NEW GUINEA	INDONESIA	PHILIPPINES	INDIA	CHILE	MALAYSIA	SINGAPORE	CHINA
5	USA	UAE	PAPUA NEW GUINEA	UGANDA	PHILIPPINES	PERU	HONDURAS	USA
6	FIJI	COSTA RICA	FIJI	KENYA	CANADA	SENEGAL	CANADA	JAPAN
7	MADAGASCAR	YEMEN	MADAGASCAR	GUYANA	USA	MEXICO	TAIWAN	MEXICO
8	CANADA	USA	USA	INDONESIA	MOZAMBIQUE	INDIA	N/A	TAIWAN
9	YEMEN	MEXICO	TONGA	ECUADOR	JAPAN	CHINA	N/A	KOREA
10	CHINA	JAPAN	MEXICO	GUINEA	SENEGAL	TOGO	N/A	BULGARIA

Source: Hong Kong Customs and Statistics Department

Mexico is the largest Latin American source of luxury seafood to Hong Kong, and was one of Hong Kong’s overall top ten suppliers of shark fin, seahorse, sea urchin, yellow croaker and clams (which category includes geoduck). The US and Canada are top ten suppliers of sea cucumber, clams, crab, abalone and sea urchin. Additionally, the US was a top ten supplier for shark fin, yellow croaker and octopus.<sup>ciii</sup>

### **b) The Hong Kong luxury seafood market**

Luxury seafood distribution in Hong Kong is highly fragmented, with many small actors purveying seafood along a complicated supply chain. Fresh and live fish enter Hong Kong through different channels than frozen, dried and other processed seafood products. Fresh seafood (preserved on ice) is required to pass through one of seven wholesale fish markets regulated by the Hong Kong Fish Marketing Organization (FMO).<sup>17</sup> In contrast, frozen, dried and other processed seafood products are housed in importing companies’ and distributors’ warehouses and rarely appear in the wholesale fish markets.<sup>18</sup> Indeed, in both the fresh and live as well as frozen, dried and other processed seafood supply chains, wholesalers often import, store and warehouse the products themselves.

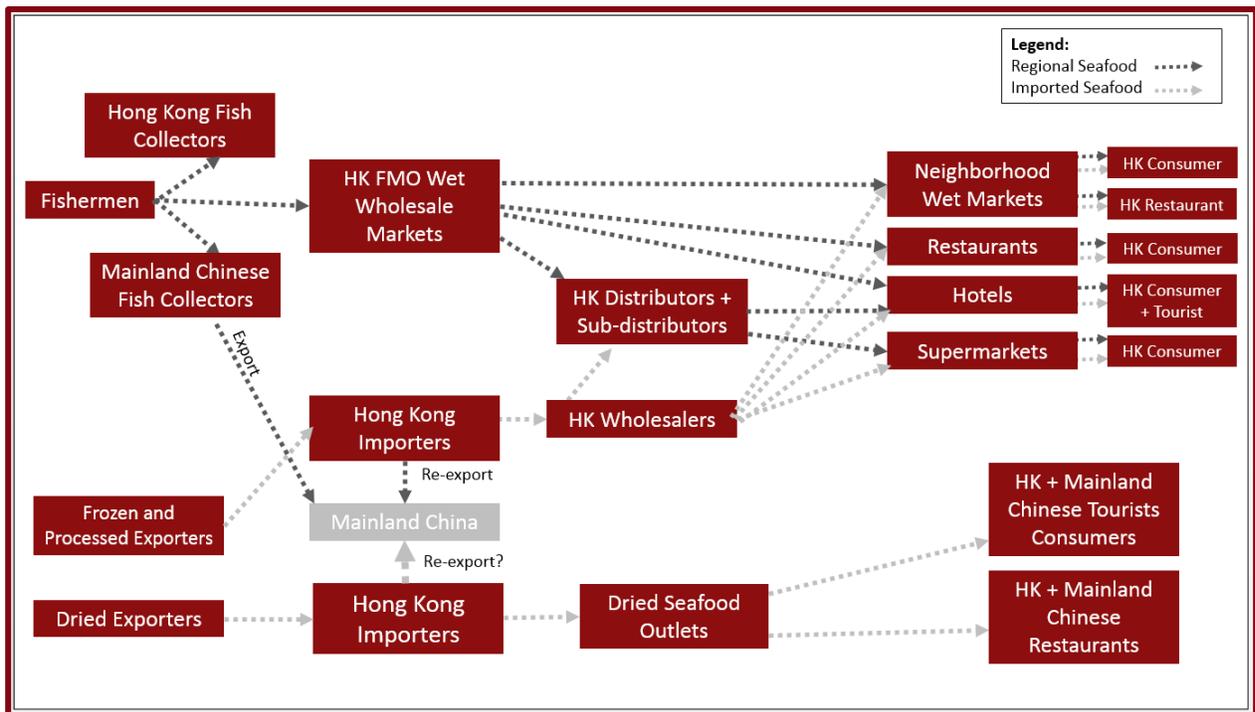
Buyers may either visit the wholesale wet markets to make purchases on a daily or weekly basis or, in the case of frozen, dried and other processed seafood products, arrange purchases in advance. Alternately, distributors and sub-distributors may deliver seafood products to neighborhood wet markets, restaurants, supermarkets, and/or hotels (Figure 2).

The below map shows the geographical location of the Hong Kong’s major seaports and seafood markets, as well as the primary locations of CapLog’s on-site data collection and interviews.

<sup>17</sup> Live seafood is not *required* to pass through the FMOs although some live fish do. Live seafood can be sold directly to consumers or restaurants without passing through the FMO facilities.

<sup>18</sup> There are no centralized facilities for frozen, dried and other processed seafood entering Hong Kong.

Figure 2: Hong Kong Seafood Supply Chain



Source: CapLog

#### Wholesale Wet Markets:

The Hong Kong Fish Marketing Organization (FMO) operates seven wholesale seafood markets across Hong Kong. The largest wholesale markets (in terms of number of vendors) are Aberdeen, Cheung Sha Wan, and Kwun Tong. Across all seven markets, the FMO serves 400 fishermen, 90 fish collectors, 120 wholesalers, and 1550 buyers.<sup>civ</sup> All fresh fish entering Hong Kong must pass through the FMO facilities, and licensed vendors are required to purchase stamps<sup>19</sup> and pay a commission to the FMO by weight of the fish sold. About 35,000 MT of fresh marine fish and 8,000 MT of live marine fish are traded annually.<sup>cv</sup> Most seafood traded through the markets is from the Hong Kong Sea, Southeast Asia, and Australia.

Aberdeen is the largest of the seven markets, with 33 separate vendor stalls. Vendors are able to sell fish according to five-year contracts that are won during a bidding process. Approximately 28-30 MT of fresh fish and 50 MT of live fish pass through Aberdeen market on an average day.<sup>cvi</sup> Around 1,000 people visit the Aberdeen market daily, and the primary clients are neighborhood market seafood stall owners and restaurant owners, most of whom visit the market between 5am-7am (the market has another busy period from 9am-11am).<sup>cvii</sup>

<sup>19</sup> Licensed companies purchase stamps and surrender them when the seafood product leaves the facilities.

### Hong Kong FMO Aberdeen Wholesale Wet Market



Most vendors in the Aberdeen market sell both live fish in tanks and whole fresh fish on ice.<sup>20</sup> Fish is rarely processed inside FMO facilities. The primary clients of Aberdeen are neighborhood wet market stall owners and restaurants. The most common seafood products passing through the market are groupers. Specific fish commonly passing through the FMO markets include golden thread, big-eyes, horse-head, yellow croaker, scad, pomfret, seabream, squid, grouper, pompano and star snapper.<sup>cviii</sup> The luxury focus species found within the wholesale market include geoduck and swimming crabs. Sea cucumber, sea urchin and octopus may also be available, but are not commonly found in the market.

### Fresh and Live Seafood at FMO Aberdeen Wholesale Wet Market



<sup>20</sup> The whole fresh fish on ice is commonly fish that has recently died after being stored in the water tanks. Once transferred from the tank to the ice there is a price markdown.

*Neighborhood Wet Markets:*

**Hong Kong Neighborhood Wet Markets**

Traditional neighborhood wet markets cater to individual consumers as well as small restaurant and hotel owners. Hong Kong consumers purchase the majority of their live and fresh fish at these outlets. There are over 100 neighborhood wet markets across Hong Kong,<sup>cix</sup> the majority of which are located on city streets, although they are now being relocated into government owned buildings as part of an effort to improve food safety. There are usually two to three vendor stalls per market, which may sell a variety of fish or specialize in one type of product (e.g., geoduck). Some neighborhood wet market outlets are also attached to seafood restaurants and customers can order fish at the market, which will then transfer the product to the restaurant kitchen for preparation.



The most common seafood products sold at neighborhood wet markets include carp, yellow croakers, spinfteet, salmon, golden threadfin bream and flathead mullet. Vendors that specialize in certain seafood products often sell geoduck, shrimp and shellfish. Fish may be sold whole (either live or fresh), and vendors usually process the fish after a customer makes a purchase, depending upon the customer's preferences.

**Whole and Filleted Seafood Products at Neighborhood Wet Markets**



**Geoduck at Neighborhood Wet Markets**



### *Dried Seafood Outlets:*

Seafood is an important component of traditional Chinese medicine and there are a large number of outlets in Hong Kong that sell dried seafood products for either their curative or preventative (health-promoting) properties. Some dried seafood outlets sell only dried seafood products, and others sell many additional types of Chinese medicines (as well as Western medicines) and may even have a traditional Chinese doctor on site for consultation. While the majority of Chinese medicine or dried seafood outlets are family-owned, there are growing numbers of corporate-owned or chain specialty stores<sup>21</sup> that focus on specific dried seafood products such as shark fin, sea cucumber, swim bladders, scallops and oysters. Some stores only sell to individual consumers, while others are wholesale. Wholesale prices are usually paid when two or more *catties*<sup>22</sup> are purchased (depending upon the product) and are typically around 10% below retail prices.

### **Dried Seafood Outlets in Hong Kong**



Most dried seafood outlets do not process the focus species in the store, but rather purchase pre-processed (pre-dried) product from importers or distributors. The retail outlets then sort the product by quality and / or size upon delivery and assign prices accordingly. The dried seafood products are usually priced by weight and are stored in glass jars, display cases or plastic bags. Some pre-packaged, individually priced items may also be available, usually for around \$38.46-\$57.69 (HK\$300-450) per bag. Some stores may also help customers soak the dried products (preparing them for consumption), but most outlets will not do this due to the food safety liability.

The range of prices for dried seafood products is very large, owing to the diversity of options available for sale. Within any given dried seafood outlet, between 5-10 different options may be offered for each individual product, and often more than 10 types (in terms of species or presentation) were observed. For example, swim bladder can be from large marine fish, eel-like fish and smaller marine fish. Different swim bladders have different uses: the bigger and thicker swim bladders are more expensive and are used in stews or served whole; the thinner ones are used in cold plates and soup in order to hide their appearance. Dried swim bladder may also be sold whole, or cut open before drying in order to have a fan shape. For shark fin, whole intact fins are more expensive than pieces of shark fin (larger fins are also more prized than smaller fins), and shark fins from multiple species could be packaged together for sale. Similarly, sea cucumber may be sold whole (which is more expensive) or shredded.

Tourists from Mainland China often purchase dried seafood products while visiting Hong Kong because they trust Hong Kong's regulation of food safety and counterfeit products more than in China. Mainland Chinese consumers have also benefited from a strengthening of the Chinese Yuan (CNY) against the Hong Kong Dollar (HKD) in recent years. Interviews suggest that the Mainland Chinese consumers that frequent Hong Kong's dried seafood stores tend to be older and more traditional.

<sup>21</sup> These chain specialty stores may be owned by an importing company, for example.

<sup>22</sup> A unit of measure commonly used in the Hong Kong seafood industry, equal to 605 grams.

### Dried Sea Cucumber, Swim Bladder and Shark



#### *Supermarkets:*

The majority of Hong Kong consumers still purchase fresh and live seafood at neighborhood wet markets, while supermarkets are more popular for frozen seafood, pre-packaged fresh seafood, and processed or canned seafood products. However, supermarkets in Hong Kong are increasingly blending the Western supermarket style with traditional wet markets by providing live fish and sushi stations.

### Hong Kong Supermarkets



While it is increasingly common for supermarkets to sell live and fresh fish (on ice), only frozen, pre-packaged fresh and canned seafood products (specifically from Latin American sources) were surveyed at seven different outlets of the supermarkets Wellcome, Park'n'Shop, DCH, 759 and Taste in order to complement CapLog's data collection in other market outlets. Interestingly, the supermarkets offered packages of frozen shark fin and frozen sea cucumber for sale instead of their dried counterparts, and the origins of the frozen sea cucumber were diverse (including South America, Mexico, Australia and South Africa). Whole, pre-packaged sea urchin was offered, as well as both fresh and frozen crab and octopus. Canned abalone from Mexico and frozen abalone from Australia were also observed.

### Frozen Sea Cucumber, Sea Urchin and Shark Fin Gelatin Product at Supermarkets



#### Restaurants:

There is a very large and thriving restaurant industry in Hong Kong offering diverse range of cuisines, including Cantonese, Szechuan, Shanghai, Japanese, Korean, French, Italian and international fusion, among others. While there are still hundreds of small family-owned seafood restaurants, the prevalence of restaurant franchises is on the rise. There is also a wide range of cost-points available, from cheap fast food and casual “big pot” restaurants<sup>23</sup> to white tablecloth and banquet dining. The majority of restaurants interviewed in the study were Chinese Cantonese because the luxury focus species are most popularly served within this cuisine.

Within Chinese Cantonese restaurants the luxury focus species are regular menu items, particularly popular in banquets for special events such as weddings and birthdays. In the words of one restaurant owner interviewed, “They are called the four treasures of Chinese cuisine – swim bladder, shark fin, sea cucumber, and abalone. They are a must-have for all luxurious Chinese banquets. It’s a necessity

#### Hong Kong Restaurants with Adjacent Fish Tanks



<sup>23</sup> “Big pot” restaurants are casual restaurants, popular when dining with family and friends, which serve a traditional Hong Kong-style meal. Big pot meals – in which a large family or group of people share from one central big pot – originated in the walled cities and villages of ancient Hong Kong. Nowadays, big pot meals are usually shared by between 4 to 12 people, and restaurants tailor to the party size.

when treating guests.” Seafood restaurants in Hong Kong often maintain tanks of live product in or adjacent to the restaurant so that customers can pick their own fish.

Specialty restaurants, which focus on a particular species (e.g., shark fin) or a certain type of event (e.g., weddings), are also common. Other popular banquet occasions in Hong Kong include company annual dinners, birthdays and first month or 100<sup>th</sup> day celebrations for newborns. Most higher-end Cantonese restaurants serve the luxury focus species on their menus as a la carte items, priced per person or per dish (which usually serves about four people).

### A La Carte and Set Dinner Menus at Hong Kong Restaurants



Lower-end restaurants tend only to feature luxury items on set banquet menus. Banquet menus tend to follow consistent pattern: appetizer platters are served first (e.g., roasted pork or jellyfish), followed by a shrimp, clam or scallop dish, then a soup (e.g., shark fin, swim bladder or bird’s nest), a larger dish featuring a whole fish or whole chicken, rice and noodles and finally dessert.

In general, Chinese New Year is the busiest holiday for Cantonese restaurants, followed by other Chinese festivals such as the Mid-Autumn Festival and Winter Solstice. The peak wedding season in Hong Kong is from the end of September to March.

Restaurants reported sourcing the focus species from a variety of different countries, and often the focus species produced in Mainland China are cheaper and of lesser or average quality than imported focus species. Smaller, family-owned restaurants purchase their seafood from wholesale or neighborhood wet markets, whereas corporate-owned or chain restaurants usually have their own buying team and will buy directly from importers.

Live Geoduck in Restaurant Water Tank; Geoduck Sashimi



Sea Cucumber on Menu; Sea Cucumber Stir-fry



Whole and Shredded Shark Fin Soup



Swim Bladder and Bird’s Nest Soup on Menu



### c) Luxury seafood prices

**Table 3: Average Prices of Luxury Focus Species at Restaurants**  
(2012 USD/Person; 2013)

Species	Wet Market Pricing		Restaurant Pricing		Supermarket Pricing
	Low Range	High Range	Low Range	High Range	
<b>Sea Cucumber (dried)</b>	\$42-\$135/kg	\$423-\$2,882/kg <sup>24</sup>	\$74/kg	\$2,119/kg	\$10-\$36/kg (frozen)
<b>Shark Fin (dried)</b>	\$212-\$318/kg	\$635-\$2,119/kg	\$233/kg	\$434/kg	\$146/kg (frozen)
<b>Swim Bladder (dried)</b> <sup>25</sup>	\$32-\$170/kg	\$631-\$2,000/kg <sup>26</sup>	\$148/kg	\$170/kg	N/A
<b>Geoduck (live)</b>	\$12-\$17/kg <sup>27</sup>	\$38-\$109/kg	\$61/kg	\$82/kg	N/A
<b>Sea urchins (fresh)</b>	\$13 per urchin	\$38 per urchin	N/A	N/A	N/A
<b>Abalone (frozen, canned)</b>	N/A	N/A	N/A	N/A	\$208-\$281/kg

Source: Hong Kong On-Site Data Collection

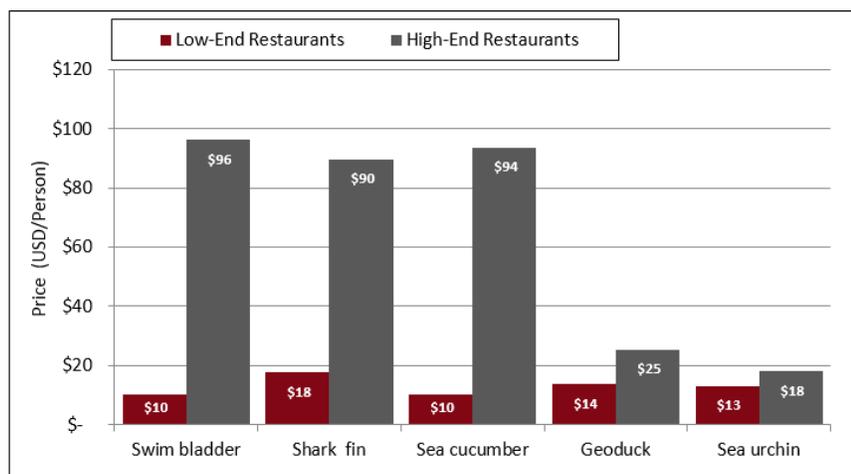
#### Luxury Focus Species Dishes in Restaurants:

Swim bladder, shark fin, geoduck and sea cucumber are popular dishes at many Hong Kong restaurants. Some restaurants also offered crab, sea urchin, jellyfish and croaker dishes. Pricing at restaurants was either by person or by dish (which usually serves 4 people).<sup>28</sup> Again, due to the diversity of options, prices may be divided between low and high ranges. Hotel restaurants were the most expensive across all luxury focus species dishes.

On the low end, dishes with swim bladder (such as soup) ranged from \$3-\$18/person and, on the high end, \$38-\$154/person. Shark fin soup cost between \$10-\$26/person on the low end and between

\$51-\$128/person on the high end. Sea cucumber dishes cost between \$8-\$13/person and \$72-\$115/person.

**Graph 8: Average Prices of Luxury Focus Species at Restaurants**  
(2012 USD/Person; 2013)



Source: Hong Kong On-Site Data Collection

<sup>24</sup> The most expensive sea cucumber came from Japan.

<sup>25</sup> The wide difference in prices of swim bladder is due to the species of fish from which it is sourced, its size (the larger the better) and the quality of its processing.

<sup>26</sup> In late 2013, at one Hong Kong hypothecary, a single swim bladder was on sale for more than \$40,000! (Source: CapLog observation, September 2013)

<sup>27</sup> The low price range was for Chinese geoduck, which is smaller and considered of inferior quality to the US and Canadian geoduck.

<sup>28</sup> In order to compare prices across different restaurants, prices per dish were divided by 4 in order to present data as “price per person”.

Geoduck dishes were the most affordable and had the narrowest price range, between \$11-\$25/person. Crab, sea urchin and jellyfish dishes (commonly served as an appetizer) were also comparatively affordable, ranging between \$14-\$37/person.

The restaurants and hotels surveyed not only offered luxury seafood dishes during regular meals, but also during banquets for special occasions. Overall, the price of banquets ranged between \$150-\$1,025 (HK\$1,200 to HK\$8,000) per banquet table, which usually seats about 12 people. The price varies depending upon the type of banquet (the higher end quote of \$1,025.64 (HK\$8,000) is for wedding banquets) as well as the type of dishes the diners request. For example, shark fin soup may be prepared in a number of different ways in order to accommodate different price ranges. Shark fin itself has very little flavor, so the soup is commonly prepared with added chicken or pork. Less expensive soup includes shredded shark fin and may contain more chicken or pork, whereas a more expensive soup contains whole or mostly intact shark fin.

The hotel wedding banquet prices were significantly greater, ranging from \$1,410.26-\$2,692.31 (HK\$11,000 to HK\$21,000) per banquet table. This higher price appears to be due to a general inflation of prices for wedding-related events in addition to the fact that hotels tend to serve higher-quality seafood products.

#### **d) Drivers of luxury seafood prices**

In Hong Kong, the seafood industry is considered a stable business for importers, wholesalers, vendors and restaurant owners, as there is strong demand for seafood throughout the year. Generally speaking, prices have risen across all species surveyed, at both the wholesale and retail levels. The Hong Kong Fish Marketing Organization (FMO) Market Manager estimated that wholesale prices may have risen across the board as much as 80% over the past 10 years.<sup>cx</sup>

Interviewees reported that prices for dry goods such as swim bladder, shark fin and sea cucumber, have risen more quickly than prices for fresh, frozen, or live species. Swim bladder prices were reported to have increased the most, with estimates of price increases of 6-7 times over the last 5-10 years, others an increase in price of about 2-3 times over the last year. The majority of restaurants reported at least a doubling in price for swim bladder over the past year. Some business owners attributed this rapid rise in prices to a declining supply of quality products and / or increasing consumer demand.

On the supply side, several wholesale vendors reported that luxury seafood prices have been affected by an overall decline in the wild-caught fish supply. Some restaurant owners also reported a decrease in the variety or quality (e.g., swim bladder and shark fin) of seafood available at market.

#### **Quotes about Supply-Side Price Drivers**

- “I think supply determines price more than demand does. It depends on how many fish are caught that season.” - *Aberdeen wholesaler*
- “Demand is always high for marine fish in Hong Kong. We eat fish all the time. You can find fish all the time. It’s just that the bigger ones are not available anymore.” - *Aberdeen wholesaler*
- “Yellow croaker sizes. Previously, yellow croakers are all over 1 catty (605g). Now that’s rarely the case. It’s really rare to have yellow croakers that are more than 1000g.” - *Restaurant manager*

On the demand side, Hong Kong consumers value seafood freshness, size and, to a lesser extent, the origin of the product. Sustainability, an important driver of seafood consumption preference in the US and EU, does not appear to be a major factor among Hong Kong consumers, with the exception of shark fin, the consumption of which has been discouraged by environmental campaigns.

Because consumers commonly eat seafood at least once a day, they tend to be very experienced with distinguishing the taste of very fresh seafood. Therefore, wholesale and neighborhood wet market vendors, as well

as restaurant owners that sell live or recently killed seafood will often discount their products at the end of the day or as they decline in freshness. Freshness is relatively easy to determine based upon appearance (e.g. the cloudiness of the eyes, crispness of the gills), smell, taste (e.g. fresher, higher quality geoduck have sweeter meat and softer texture), or the movement of the fish (in the case of live fish). Certain colors are also associated with higher quality products, with red fish often garnering a substantial price premium over other colors of fish and golden swim bladder being considered superior to grey swim bladder.

For dried seafood products, the value of the products is based upon their appearance and the quality of the processing. It often requires a trained eye to distinguish the value of different dried seafood products. For this reason, dried seafood vendors often seek to build a rapport with their consumers, to give them confidence that the vendor's products are of the highest quality.

#### Quotes about Demand-Side Price Drivers

##### **Quality: Freshness and Appearance**

- “Chinese people prefer live things. Live fish, live chicken. They believe the fresher it is, the better the quality. So we sell them in water tanks. You can see the shrimp moves and know it's fresh. The more it moves, the better.” - *Cantonese restaurant manager*
- “We sometimes cut prices for seafood products at the end of the day. But for some species we can keep them alive in tanks for a while. We usually lower the price and sell them if they die. For geoduck, we mostly don't keep any in stock. People pre-order them from us 1-2 days in advance.” - *Neighborhood market vendor*
- “As long as it is fresh, the customers are happy. Freshness affects the taste. For example, oysters are delivered to us Monday, Thursday and Saturday. Some frequent customers will come on those days just for the oysters (around \$10.32 (HK\$80) each). So I guess we don't promote origin. We promote freshness.” - *French fusion restaurant owner*
- “Swimming crabs are hard to maintain. Sometimes we have difficulty keeping them alive in our fish tanks. If a fish is found to be dead, we would find a way to preserve it or use it for dishes that freshness does not matter as much. But crabs smell really bad once they are dead and we cannot use them. They will just go to waste.” - *Cantonese restaurant manager*
- Regarding dried seafood: “It all depends on the processing and handling skills. The original product [the live fish] is similar throughout the world as long as it's the same species. But Mexico and Brazil have better processing, you can tell they do it with their hearts.” - *Dried seafood outlet owner*

Size is also an important determinant of price for most species. Increased value is attributed to larger live, fresh and dried seafood products in part because they are considered rarer. For dried seafood, products are generally more expensive if they are larger in size, thicker, and whole (as opposed to shredded, loose, or broken into pieces).<sup>29</sup>

#### Quotes about Demand-Side Price Drivers

##### **Quality: Size**

- Geoduck: “These bigger [geoduck] are more popular in winter when there are family gatherings. They are expensive.” - *Neighborhood market vendor*
- Geoduck: “Only the expensive, big, white geoduck can be eaten as sashimi, the darker grey ones, mainly from China, are usually steamed.” - *Neighborhood market vendor*
- Shark fin: “But [price] is not usually based on where the fins are from or even the species. It's based on size and whether it's the whole fin or loose fins.” - *Restaurant manager*
- Sea cucumber: “Some are gigantic, big like a 1 liter soda bottle. Those are around \$128.97-\$257.94 (HK\$1,000-2,000), depends on its thickness.” - *Chef who works for Cantonese restaurant chain*
- “Because the CNY went up, now when Mainland Chinese come to buy products in Hong Kong they

<sup>29</sup> Swim bladders of marine species are usually larger than freshwater species and therefore are more valuable.

automatically receive 25% off because of the exchange rate.” – *Seafood business owner*

With regard to dried seafood products, many vendors identified a rising demand from Mainland Chinese tourists who purchase these products while in Hong Kong. Mainland Chinese consumers perceive Hong Kong products as higher quality (and less likely to be counterfeit) over Chinese products, and have also benefited from the CNY-HKD exchange rate in recent years.

Despite reported decline in the availability and average size of many luxury seafood species, vendors report that consumers only know or care about the environmental impact of eating shark fin soup. Twelve of the twenty-five restaurants interviewed reported a decrease in shark fin sales. One restaurant owner estimated shark fin sales to have declined 10-40% from 5 years ago. Restaurants also reported that customers usually substitute shark fin dishes with equally valuable items, such as bird’s nest, thus not affecting their overall restaurant revenue. “Environmental reasons” or “animal cruelty” were often cited as the reasons behind the decline in shark fin consumption. However, some interviewees also believed the decline in demand was due to the younger generations not being interested in traditional foods.

**Quotes about Demand-Side Price Drivers**  
***Environmental Considerations***

- “Shark fin decreased in demand because of environmental reasons, especially during wedding banquets. We usually use expensive substitutes such as bird’s nest to make sure it’s still presentable. But this is the case for around 10-20% of banquets here only because the older people in the family like shark fin. It is a symbol of status. The younger ones, if they have a say in banquet food, would care more about environmental impacts.” - *Restaurant owner*
- “It is possible [that origin will increase price] but definitely not in Mainland China. Chinese culture doesn’t regard these as important. They don’t care about environmental impact. It’s just not a reason for them to even consider. From my experience, Hong Kong’s shark fin demand may have dropped more than in Mainland China. It’s possible that Chinese demand [for shark fin] may still be increasing as a whole.”<sup>30</sup> - *Restaurant owner*

Over the course of the year, demand and prices vary seasonally and are always higher during the winter months, peaking around the Chinese New Year. There are several important Chinese holidays during the winter, but it is also a common belief that winter is a more suitable time for supplementing and nourishing your body, thus contributing to increased seafood consumption as well. While marine fish are popular throughout the year, species that are traditionally served at hotpot or Big Pot restaurants (e.g. carp, dried sea cucumber, shark fin and swim bladder) are more popular during the winter. Peak geoduck consumption season is the winter as well. Yellow croakers are available all year without price fluctuations. The prices of dried seafood products do not fluctuate seasonally because they are easily storable and therefore available year-round. Even despite increased demand during the winter months, dried seafood prices remain relatively stable, or may even be offered at a discount, evidence of fierce competition in the dried seafood space.

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<sup>30</sup> An expert on Chinese culinary traditions consulted for the report agreed with this statement, “Hong Kong has been affluent for much longer and consumers are more attuned to demanding environmental quality. They’ve been wealthy and are “over” shark fin – less of a need to prove their wealth. [Mainland] China for the most part is starting to become increasingly affluent after decades of “suppression” of enjoying luxury process (mostly access due to limited wealth). After finally accumulating this wealth, the Chinese are generally eager to flex this wealth. Shark fin is still the “cool” benchmark.”

### e) Luxury seafood consumer preferences and perceptions

For the most part, neither Hong Kong wholesalers, retailers, restaurant owners, nor consumers were particularly concerned about the origins of the seafood they buy. As evidence for this, several wet market vendors and restaurant owners reported that customers never ask where the seafood is from. There are a few notable exceptions to this observation, particularly when a seafood production region has a reputation, be it good or bad.

“Quality [impacts price], but origin is related to quality. People don’t love Canadian geoduck because they are from Canada, but because of the quality and texture of the clams.” – *Wet Market Vendor*

On one hand, products like Japanese sea cucumber, South African abalone and Canadian geoduck all enjoy a positive market cachet, as they are believed to come from pure, uncontaminated oceans. On the other hand, species originating in Mainland China are generally perceived to be of lower quality and are therefore less expensive. For example, Chinese geoduck are smaller and darker than US and Canadian geoduck, and dried Chinese swim bladder tend to be significantly cheaper as well.

The lower value of Chinese products may stem in part from consumers’ value of wild-caught and “rare” seafood products (which are generally believed to come from clean, pristine waters) over aquaculture products. Other reasons include generally lower Chinese consumer confidence in domestically-produced products related to concerns regarding food safety and water quality/environmental pollution.

Very few interviewees had an opinion regarding seafood products originating in Mexico, and most commented that they would need to try Mexican seafood products before being able to evaluate their quality. In general, their perception of Mexico was neutral, but several interviewees did mention Mexican abalone positively, and specifically the Calmex brand. Only one interviewee reported a negative image of Mexico, claiming that it does not yet have the technology to produce good quality products.

Mexican Geoduck



#### Hong Kong Vendors’ Quotes about Mexican Seafood:

- “They [Mexico] are famous for their canned abalone. Calmex. Have you heard of it? They are famous for good quality canned abalone.” - *Chef who worked for Cantonese restaurant chain*
- “Mexican abalone is very famous. Mostly canned though (around 80%). Their scallops are big but unfortunately the texture is too hard and chewy. Hong Kong people don’t like this texture.” - *Seafood store vendor connected to a seafood restaurant*
- “I probably won’t buy from them yet because they don’t have the skills yet. Sometimes, things need to be dried or processed into the products we want. I don’t think Mexico has the technology to make them yet. For example, a dried abalone is more expensive (than canned ones Mexico is making) because it takes longer to make. They are very difficult to make. Well-made ones can be stored up to 10+ years.” - *Restaurant manager*

## 4 IMPACT OF CHINESE SEAFOOD DEMAND ON MEXICO

In Section III, we highlight China and Hong Kong's growing demand for luxury seafood products. This section attempts to flesh out Mexico's role in meeting that growing demand. It starts with a broad overview of Mexico's major fisheries by volume and value, followed by a detailed look at the volume and value of the luxury focus species produced in Mexico. The section then examines Mexico's seafood trade with multiple countries to give context to the growing Mexico-China seafood trade. The section concludes with an exploration of evolving trade channels, trade regulations and Mexican luxury seafood exporters' strategies for meeting Chinese demand.

### 4.1 Mexico's Seafood Production

#### a) Mexico's major fisheries

Mexico is the third largest seafood producer by volume in Latin America, behind Peru and Chile.<sup>cx1</sup> Table 4 shows average landed weight, prices and total values of Mexico's 12 largest fisheries from 2005-2012. Sardine, tuna and shrimp are Mexico's most productive fisheries, making up 53% of the nation's total commercial catch from 2005-2012 (Table 5). Mexico's most valuable fisheries are shrimp,

**Table 4: Summary of Changes in Mexico's Largest Fisheries**  
(MT; 2012 USD/KG; 2012 USD; 2005-2012)

SPECIES	AVERAGE VOLUME (MT)	% Δ in Volume (2005-2008 v. 2009-2012)	AVERAGE PRICE (2012 USD/KG)	% Δ in Price (2005-2008 v. 2009-2012)	AVERAGE VALUE (2012 USD)	% Δ in Value (2005-2008 v. 2009-2012)
Sardine	200,764	29%	\$ 0.11	-22%	\$ 21,365,986	3%
Tuna	96,924	17%	\$ 0.89	-17%	\$ 85,785,482	-1%
Shrimp	50,668	-2%	\$ 5.43	-12%	\$ 274,998,291	-14%
Squid	45,940	-18%	\$ 0.28	79%	\$ 12,779,620	40%
Mackerel	23,292	-54%	\$ 0.04	286%	\$ 997,895	70%
Crab	22,870	-14%	\$ 1.12	-1%	\$ 25,522,447	-15%
Octopus	20,737	52%	\$ 2.72	-16%	\$ 56,497,165	25%
Clams	20,708	-18%	\$ 0.89	25%	\$ 18,503,679	-2%
Shark	17,789	4%	\$ 1.20	-6%	\$ 21,305,537	-2%
Grouper	10,451	39%	\$ 2.14	-22%	\$ 22,363,888	-28%
Red Snapper	6,794	-2%	\$ 3.36	-21%	\$ 22,812,229	-21%
Lobster	2,581	-2%	\$ 12.24	11%	\$ 31,598,969	38%

Source: CONAPESCA

tuna, octopus, and lobster, which had a combined average annual fishery value of \$450 million over the 2005-2012 period.<sup>31</sup> Shrimp was by far the most lucrative Mexican fishery, capturing an average annual value of \$275 million (Table 4).<sup>32</sup>

There is a wide disparity in the average ex-vessel price of Mexico's largest fisheries, from \$0.04/kg for mackerel to \$5.43/kg for shrimp and \$12.24 for lobster. Half of the fisheries have seen decline in ex-vessel prices, with mackerel, squid and clams experiencing the most positive price increases from 2005-2012.

High prices give certain low volume fisheries like lobster an outsized role in Mexico's overall fishery income. Lobster, which represented less than 0.3% of Mexico's total catch, accounted for nearly 4% of Mexico's total fishery value from 2005-2012 (Table 5). Similarly, while shrimp accounts for just 8% of Mexico's total catch, it is responsible for more than one-third of Mexico's total fishery revenue (Table 5).

<sup>31</sup> The aggregate total value of Mexico's shrimp, tuna, octopus and lobster fisheries was \$434.5 million from 2005-2012.

<sup>32</sup> The aggregate total value of Mexico's shrimp production was \$2.2 million from 2005-2012.

**Table 5: Largest Fisheries' Average Share of Total Mexican Fishery Landings and Ex-Vessel Value (2005-2012)**

TOTAL VOLUME V. TOTAL VALUE	% TOTAL VOLUME	% TOTAL VALUE
Shrimp	8%	35%
Tuna	15%	11%
Octopus	3%	7%
Lobster	0.3%	4%
Red Snapper	1%	3%
Shark	3%	3%
Crab	3%	3%
Sardine	30%	3%
Grouper	2%	3%

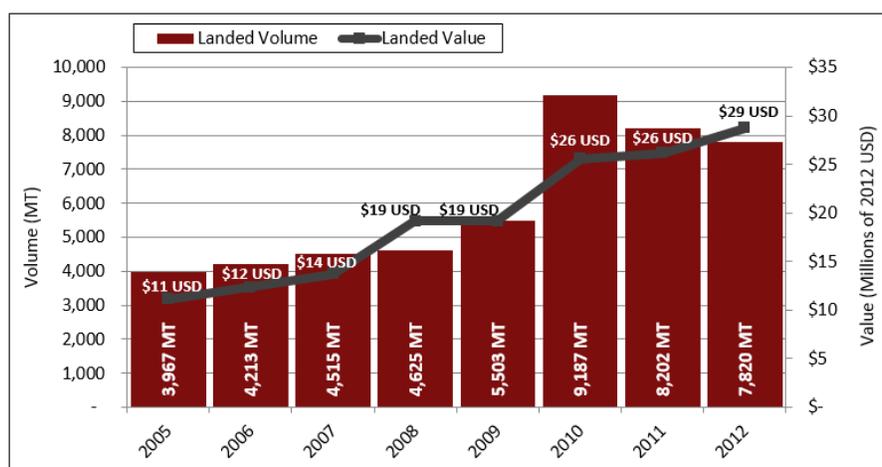
Source: CONAPESCA

Appendix D contains a more in-depth analysis of changes in the volume and total value of each of Mexico's largest fisheries from 2005-2012.

**b) Mexico's luxury fisheries**

While the luxury species selected for this study do not account for a significant proportion of Mexico's total fishery volume, their production and total fishery value have been rising at notable rates in recent years. Graph 9 shows the aggregate landings and value of the luxury focus species selected for this study (geoduck, sea cucumber, sea urchin, shark fin and swim bladder). The average annual value of these species increased by 78%, from an average of \$14 million from 2005-2008 to an average of \$25 million from 2009-2012.

**Graph 9: Volume and Value of Mexico's Luxury Fisheries\***  
(MT; Millions of 2012 USD; 2005-2012)



Sources: CONAPESCA; CapLog 2012; Barron 2011; CapLog 2013

\*Geoduck, sea cucumber, shark fin, sea urchin

Table 6 shows average landed weight, prices and total values of seven of Mexico's luxury focus species fisheries from 2005-2012. From 2005-2012, Mexico's annual production of nearly all of the luxury focus species increased significantly.

The ex-vessel prices of some luxury focus species have risen, while others have fallen since 2005. Swim bladder experienced the largest increase in price (262%), growing from \$1.08/kg in 2005 to \$13.27/kg in 2012 (the average price of swim bladder was \$5.30/kg over the eight-year period). Crab, croaker, shark fin and sea cucumber also experienced ex-vessel price increases. Sea urchin and geoduck have all seen decreases in ex-vessel price (Table 6).

From 2005-2012, the majority of Mexico's luxury focus species experienced a significant increase in ex-vessel value. Swim bladder had the greatest increase in ex-vessel value of 335%, with a total fishery value growing from \$148,000 in 2005 to \$2.6 million in 2012. Also of notable growth in ex-vessel value were sea cucumber (215%) and sea urchin (95%). Shark fin and crab were the only species that saw decreases in overall value. The value of shark fin fell from \$2.64 million in 2005 to \$1.96 million in 2012.<sup>33</sup> The species with the largest price increases are all relatively new and/or growing industries in Mexico, while shark and crab are both fairly established fisheries.

Comparing the 2005-2008 period to the 2009-2012 period, the average annual production of every species except crab increased. Sea cucumber production nearly quadrupled from an average of 444 MT from 2005-2008 to an average of 1,673 MT from 2009-2012. Over the same period, geoduck and sea urchin production grew by 74% and 66%, respectively (Table 6).

Table 6 shows the change in value of Mexico's luxury fisheries from 2005-2012. With the exception of shark fin and crab, every other product category increased over that time period, with several products showing major growth, such as swim bladder (335%), sea cucumber (215%) and sea urchin (95%).

**Table 6: Summary of Changes in Mexico's Luxury Focus Species**  
(MT; 2012 USD/KG; 2012 USD; 2005-2012)

SPECIES	AVERAGE VOLUME (MT)	% Δ IN VOLUME (2005-2008 v. 2009-2012)	AVERAGE PRICE (2012 USD/KG)	% Δ IN PRICE (2005-2008 v. 2009-2012)	AVERAGE VALUE (2012 USD)	% Δ IN VALUE (2005-2008 v. 2009-2012)
<b>Geoduck†</b>	1,511	74%	\$ 4.19	-11%	\$ 6,246,242	55%
<b>Sea Cucumber</b>	1,058	277%	\$ 0.60	87%	\$ 1,580,739	215%
<b>Shark Fin*</b>	800	4%	\$ 0.10	3%	\$ 2,312,359	-11%
<b>Swim Bladder‡</b>	198	38%	\$ 5.30	262%	\$ 1,113,836	335%
<b>Croaker</b>	7,319	38%	\$ 0.21	124%	\$ 9,651,230	41%
<b>Sea Urchin</b>	2,437	66%	\$ 0.13	-14%	\$ 8,258,248	95%
<b>Crab</b>	22,870	-14%	\$ 1.17	43%	\$ 25,059,046	-19%

Sources: CONAPESCA; CapLog 2012; Barron 2011; Caplog 2013

† Geoduck value based on 2011 prices

\* Shark Fin volume based on an estimated fin weight of 4.5% of total landed weight ; Shark fin prices based on 2011 prices from the Gulf of Mexico.

‡ Swim Bladder volume based on an estimated swim bladder weight of 2.71% of total landed weight for the curvina golfina fishery; Swim bladder price based on estimates from the curvina golfina fishery.

<sup>33</sup> Due to a lack of reliable data on shark fin prices, the value of the shark fin catch was based on 2011 shark fin prices, the only year for which we have reliable data. It is likely that the price of shark fin experiences variation during the period of time in question, but this likely change is not reflected in this chart.

Please see Appendix D for complete analysis of changes in the volume, price and total value of each of Mexico's luxury focus species from 2005-2012.

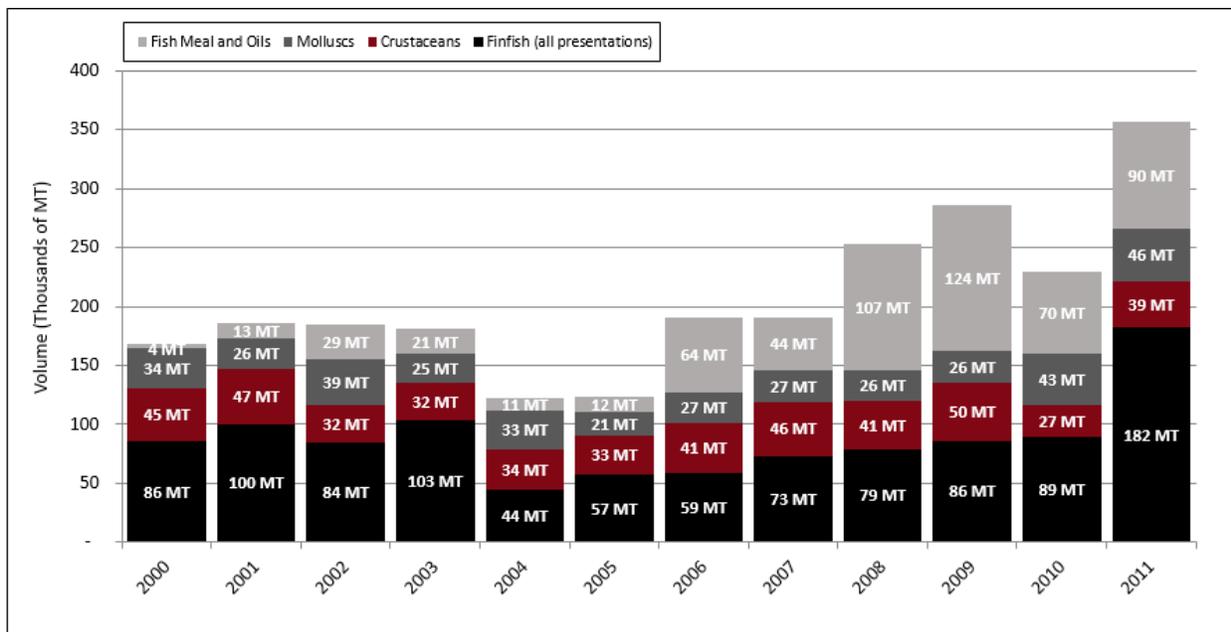
#### 4.2 Mexico's Foreign Seafood Trade

- Fishmeal and fish oil represent almost half of Mexico's seafood exports, but account for only one tenth of the total seafood export value.
- The US is the largest importer of Mexican luxury seafood<sup>34</sup> in terms of volume, but China (including Hong Kong) is the largest importer of Mexican luxury seafood in terms of value.
- The total value of Mexico's seafood trade (across all species) with Mainland China and Hong Kong has increased by roughly 850% from 2002-2012. Since 2002, Mexico's seafood trade with Hong Kong has been consistently 3-5 times more valuable than Mexico's seafood trade with Mainland China.

##### a) Mexico's seafood exports

Mexico saw significant changes in the composition of its global seafood exports from 2000-2011, particularly the emergence of an important trade in fishmeal and fish oils. In 2000, fishmeal and oils represented only 2% of Mexico's total seafood export volume, with just over 4,000 MT. By 2011, fishmeal and oils made up than 25% of all of Mexico's seafood exports, at close to 90,000 MT. Finfish exports increased by 112% from 2000-2011. With exports totaling 182,106 MT in 2011, finfish accounted for 51% of all exports. Over the same period of time, Mexico's mollusk and crustacean exports remained relatively constant, with an annual average export volume of 28,357 MT and 40,011 MT respectively (Graph 10).

**Graph 10: Mexico's Top Seafood Exports by Volume**  
(Thousands of MT; 2000-2011)

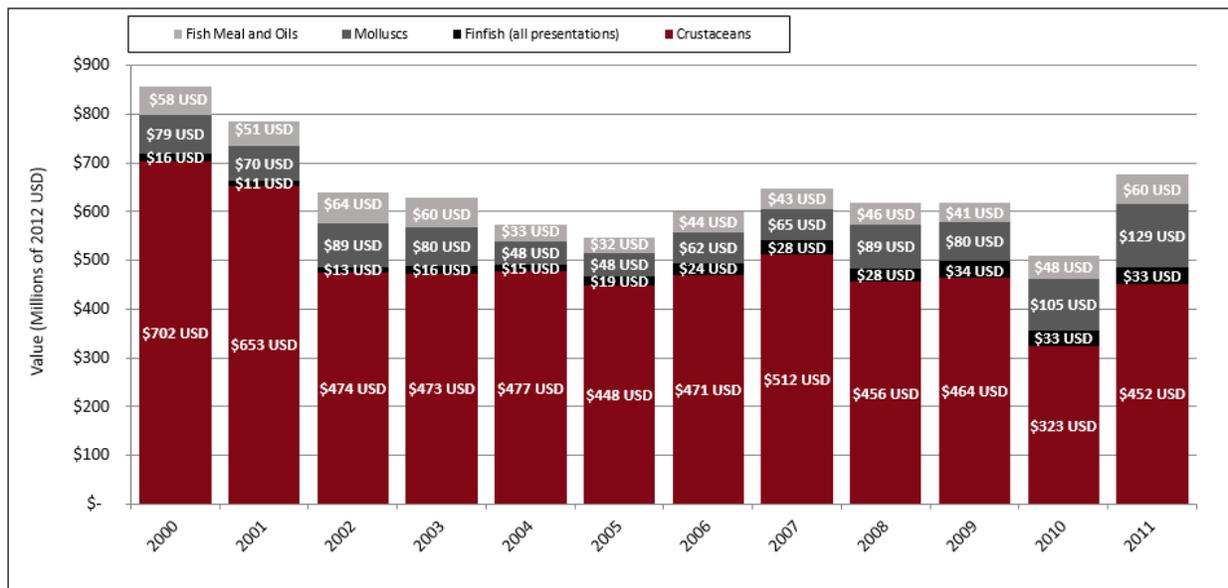


Source: FAO

<sup>34</sup> Luxury species in this statistic include sea cucumber, sea urchin, shark fin and clams, cockles and ark shells.

While fishmeal and oils accounted for 24% of Mexico’s seafood exports by volume, they only accounted for 8% of the total value of Mexico’s global seafood exports from 2000-2011 (Graph 11). Crustaceans, including shrimp, crab and lobster account for the largest percentage of Mexico’s seafood exports by value, comprising 77% of the value of all Mexican seafood exports from 2000-2011 (Graph 11). Despite volume remaining relatively constant at 39,000 MT, the overall value of crustaceans has fallen by 36% from 2000-2011. Mollusks have remained relatively steady in terms of export volumes, averaging 31,000 MT from 2000-2011, but in terms of value the category has fluctuated over the years. Mollusks declined in value to a low of \$48 million in 2005, but have since risen to \$129 million, with an overall increase of 63% from 2000-2011. Averaging exports of 87,000 MT, finfish saw an increase in value of 105% from 2000-2011.

**Graph 11: Mexico’s Top Seafood Exports by Value**  
(Millions of 2012 USD; 2000-2011)



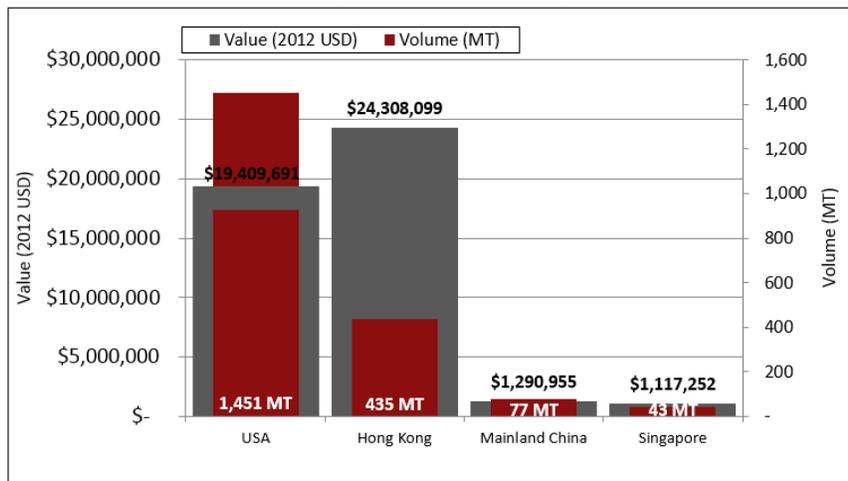
Source: FAO

The US is Mexico’s largest seafood export partner in terms of volume, accounting for 41% of Mexico’s seafood exports from 2003-2013. China has become an increasingly important importer of Mexican seafood, with the volumes of seafood it imports from Mexico increasing by 232% over the past decade. Thailand also experienced growth, with a 20% increase in volume. Exports to Japan decreased by 74% and exports to Spain decreased by 39%. (Appendix D)

The US is also Mexico’s largest seafood export destination in terms of value, accounting for 56% of total export value in 2012 (or \$443 million). Mainland China and Hong Kong have become increasingly important export markets for Mexican seafood, increasing from 5% of Mexico’s total seafood export value in 2002 to 10% in 2012 at total value of \$77 million (Appendix D).

While Mainland China and Hong Kong are important export destinations for Mexico in terms of value, Mexico is not a major supplier of seafood for Mainland China and Hong Kong. With an export value of \$133 million in 2012, Mexico’s exports made up only 1.21% of Mainland China and Hong Kong’s total seafood imports in 2012.<sup>cxiii</sup>

**Graph 12: Top Importers of Luxury Focus Species\* from Mexico by Volume and Value**  
(MT; 2012 USD; 2012)



Source: UN COMTRADE

\*Includes: sea cucumber, sea urchin, shark fin, clams/cockles/ark shells

#### **HISTORICAL SEAFOOD TRADE BETWEEN MEXICO AND CHINA: TOTOABA AND BAHABA**

Regular trade routes between China and Mexico have existed since the mid-16<sup>th</sup> century, when the Spanish Crown established regular shipping routes between Acapulco, Mexico and Manila, Philippines to meet China’s demand for silver ingots, which were used as the standard means of trade during the Ming Dynasty. Spanish galleons, laden with silver from the rich mines of Zacatecas in Mexico’s central highlands, left the Mexican port of Acapulco, embarking on a four-month journey to the Philippines, where the precious metal was traded to Chinese merchants in exchange for spices, porcelain and other luxury goods. The ‘Manila Galleons’ sailed these Chinese trade goods back to Acapulco, where they were transported over the Mexican highlands to the eastern port of Veracruz, where they were loaded on Spanish silver fleet and shipped to Seville.<sup>cxiii</sup> This link between Spain and China, via Mexico, created one of the earliest examples of truly global commerce.

The Mexican seafood trade with China dates back at least as far as the early 1800s, when Chinese migrants, who came over to Mexico to work on the railroads and infrastructure projects of Mexico’s seven-term president Porfirio Diaz, saw opportunities in the seafood trade. The Chinese immigrants were largely from Southern China and brought with them a strong seafood cuisine tradition to their new home. By the mid-1800s Chinese immigrants in San Francisco, California had set up a regular seafood trade with China. And in 1870, California’s largest export was dried seafood being shipped to Hong Kong.<sup>cxiv</sup> Around three million pounds of shrimp were harvested in the Bay Area in the late 1800s and into the early 20<sup>th</sup> century, with the majority being exported to China.<sup>cxv</sup>

At the turn of the century, Chinese-Mexicans living in the states of Sonora and Baja California also discovered the totoaba (*Totoaba macdonaldi*), a giant croaker endemic to the Upper Gulf of California. Chinese traders recognized the totoaba as having similar properties to the bahaba, or Chinese yellow croaker (both fish are members of the family *Sciaenidae*), which to this day is highly valued for its large swim bladder, thought to have curative properties.

A 1928 edition of the California Fish and Game Magazine highlights this early instance of luxury seafood trade between Mexico and China.

“But it happened that some Chinese ... discovered that the sound or swim-bladder of the fish was of unusual character, and not dissimilar to that of fishes in the Orient which, when properly dressed and dried, sold for astonishing prices.”<sup>cxvi</sup> (1928)

"The product secured from the swim bladder is called "buche" and is made by simply removing the bladder and as much of the peritoneum as possible, and drying it in the sun. Sometimes as much as three pounds of this dried material is secured from one fish. It is sold at a price of from \$1.50 to \$2 a pound [\$44.09-\$59.50/kg in 2012 USD] to the Chinese, who consider it a great delicacy, and use it in chop suey and other dishes."<sup>cxvii</sup> (1926)

In both the case of the Chinese bahaba and the Mexican totoaba, the demand for swim bladder has led to serious overfishing and habitat degradation. Intensive fishing efforts in the 1930s and 1940s contributed to a steep decline in landings and the average size of animals caught. In 1945 over 2,200 MT of totoaba were caught in the Upper Gulf of Mexico, but by 1975, only 58 MT of totoaba were landed.<sup>cxviii</sup> By 1990 catching large bahaba (over 10lbs) had become exceedingly rare.

**Curvina Golfina and Totoaba Swim Bladder in Mexico**



As each of these fish became scarcer in the wild, the demand for their swim bladder increased and prices skyrocketed, growing from a few \$/kg in the late 1930s, to tens of thousands of dollars in the 2000s.<sup>cxix</sup> In 2010, the demand for totoaba swim bladder resurfaced, with buyers paying as much as \$500/kg. By early 2014, the totoaba swim bladder was reportedly fetching over \$2500/kg at the beach. In August of 2012, a fisherman netted a 176lb bahaba and was paid \$371,974 for the whole fish.<sup>cxx</sup>

The Mexican government officially closed the totoaba fishery in 1975, and totoaba became 'protected' under the 1976 Convention on International Trade in Endangered Species (CITES) endangered species list. Bahaba and totoaba are both also classified as 'critically endangered' by the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.<sup>cxxi</sup> But as prices rise, so do the incentives to poach the endangered species. With bladders weighing as much as 1kg, fishermen in the Upper Gulf of California could stand to make a year's wage in a single night of illegal fishing.

## **b) Mexico's luxury seafood exports**

Table 7 presents a snapshot of the Mexico's luxury seafood exports in 2012. Octopus was by far the largest volume luxury seafood export, followed by crab, sea cucumber and jellyfish. Octopus, sea cucumber and shark fins were the most valuable of Mexico's luxury seafood exports.<sup>35</sup>

The US, China and Hong Kong are consistently top three importers of Mexican luxury seafood, the only exception being octopus, which is predominantly imported by EU countries.

While the US was the largest importer of these products by volume, Hong Kong imported the most product in terms of value.

<sup>35</sup> Tracking Mexico's historical exports of the luxury focus species is particularly difficult, as the international Harmonization System (HS) – the standard global taxonomy codifying trade goods – did not include unique product codes for geoduck, sea cucumber, swim bladders or shark fin until 2012. Instead, these species were all included within aggregate product categories. As a result, many of the most reliable sources of international trade data have no reported volume or value for several of the focus species prior to 2012. However, while there is little information on Mexican exports, several of Mexico's trading partners do track their imports from Mexico in more detail. CapLog obtained import data from NOAA and the HKCSD to shed light on Mexico's trade in the luxury focus species. See the Feature, "The Harmonized System (HS) and Luxury Seafood Trade."

**Table 7: Mexican Exports of Luxury Focus Species, as Reported by Top Importing Countries**  
(MT & 2012; USD 2012)

PRODUCT	VOLUME (MT)	VALUE (2012 USD)	% TOTAL VOLUME	% TOTAL VALUE
<b>Shark Fins</b>	<b>178</b>	<b>\$ 11,840,421</b>		
Hong Kong	177	\$ 11,637,375	100%	98%
Japan	0	\$ 166,579	0%	1%
<b>Sea Cucumber</b>	<b>1,356</b>	<b>\$ 32,259,236</b>		
USA	1,026	\$ 18,439,686	73%	55%
Hong Kong	253	\$ 12,528,595	18%	37%
Mainland China	77	\$ 1,290,955	5%	4%
<b>Fish heads, tails and maws (swim bladder)*</b>	<b>55</b>	<b>\$ 182,313</b>		
USA	53	\$ 85,940	97%	47%
Hong Kong	2	\$ 90,370	3%	50%
<b>Clams, cockles and ark shells (geoduck)*</b>	<b>376</b>	<b>\$ 952,109</b>		
USA	372	\$ 884,065	99%	0%
Hong Kong	3	\$ 51,759	1%	0%
<b>Jellyfish</b>	<b>1,060</b>	<b>\$ 1,649,880</b>		
Mainland China	1,060	\$ 1,649,880	100%	100%
<b>Sea Urchin</b>	<b>88</b>	<b>4,947,778</b>		
Japan	78	\$ 4,787,335	89%	97%
USA	7	\$ 10,105	8%	0.2%
Hong Kong	3	\$ 150,338	3%	3%
<b>Crab</b>	<b>1,436</b>	<b>\$ 4,254,888</b>		
USA	808	\$ 2,446,120	54%	50%
Rep. of Korea	578	\$ 1,610,628	39%	33%
Indonesia	51	\$ 198,140	3%	4%
<b>Octopus</b>	<b>5,924</b>	<b>\$ 32,973,265</b>		
Italy	4,241	\$ 22,201,255	54%	47%
Spain	845	\$ 5,479,533	11%	12%
Portugal	838	\$ 5,292,477	11%	11%
<b>Lobster</b>	<b>712</b>	<b>26,478,567</b>		
USA	359	\$ 13,507,548.00	0%	48%
Hong Kong	322	\$ 12,025,185.00	0%	43%
France	30	\$ 945,834.00	0%	3%

Source: UN COMTRADE

\* Swim bladder does not have its own product specification and is grouped into the larger category 'fish heads, tails and maws'

\*Geoduck does not have its own product specification and is grouped into the larger category 'clams, cockles and ark shells'

#### THE HARMONIZED SYSTEM (HS) AND LUXURY SEAFOOD TRADE

The Harmonized Commodity Description and Coding System or 'Harmonized System' (HS) is an international standard for the classification of trade products.<sup>cxix</sup> The HS allows participating countries to categorize and flow of imports and exports. There are currently 5,300 unique products described in the HS's 99 chapter nomenclature. Each code is comprised of six digits. The first two (HS-2) identify the chapter in which the goods are classified, for example '03' refers to aquatic food products. The next two digits (HS-4) represent groupings within that chapter, for example '03.03' refers to "fish, frozen, excluding fillets and other fish meat of heading 03.04." The last two digits further specify the product, for example, '03.03.21' is the product code for frozen trout.

Since its introduction in 1988, the HS has undergone frequent structural revisions. HS codes are modified by the World Customs Organization every five years, with most recent revisions occurring in 2012. Changes are based upon input from member countries and can reflect environmental concerns, food safety crises, evolving trade flows, new trade products or advances in technology.<sup>cxix</sup> While the HS aims to create a single standard for tracking products, individual countries occasionally make tariff classification decisions that are at odds with those of their trading partners.

For the time range of this study, several of the luxury focus species were not explicitly listed within international trade databases until 2012, which may reflect general trends of increasing trade of high value seafood products. In years prior to 2012, several species fall into larger product groupings, making tracking exports of those species difficult. For example, until HS code changes in 2012, jellyfish, sea urchin, sea cucumber and geoduck all were classified under mollusks and invertebrates. Please see Appendix A to view a table of "Changes to the Harmonization System Used to Classify Luxury Focus Species Products (2002-2012)"

Hong Kong adheres to HS coding, but adds two additional digits that further refine commodity classification. These additional digits often present much more nuanced product information. For example, shark fin has five classifications that extend beyond

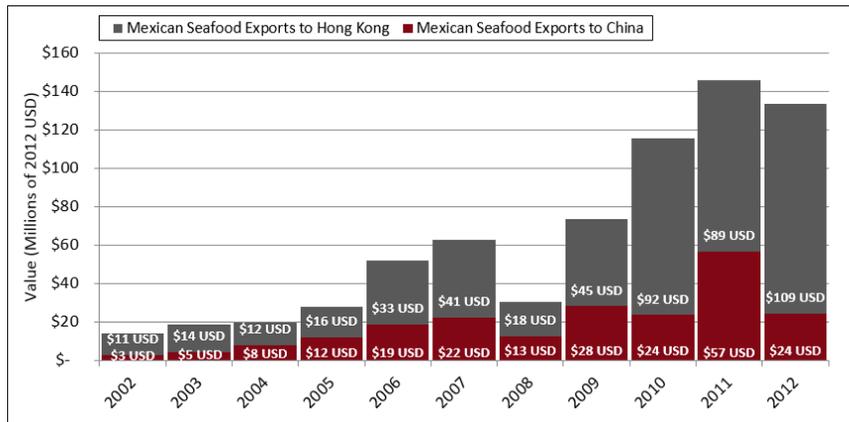
030571, with extra tags specifying whether cartilage or skin is present. Since Hong Kong has traditionally imported high value seafood species, several focus species appear in the HS codes prior to 2012. Please see Appendix A to view a table of “Changes to the Hong Kong Harmonization System Used to Classify Luxury Focus Species Products”.

Hong Kong’s approach to the HS classification of high-value trade goods could provide a set of ready-made guidelines to countries seeking to improve the quality of their trade data capture. Mexico in particular, could benefit from an overhaul of their HS classification system, allowing government officials to track the trade in specific at-risk species and allowing businesses to better understand and respond to trade trends.

**c) The Mexico-China luxury seafood trade**

From 2000-2012, Mexico exported over 13,000 MT of luxury seafood products worth over \$650 million to China and Hong Kong. The annual value of that trade has grown rapidly over the last 10 years, from \$14 million in 2002, to \$133 million in 2012 (Graph 13). Mexico’s seafood trade with Hong Kong has been consistently 3-5 times more valuable than Mexico’s seafood trade with Mainland China and has been worth over \$100 million each year since 2010.

**Graph 13: Mexican Seafood\* Exports to Hong Kong and China by Value**  
(Millions of 2012 USD; 2000-2012)

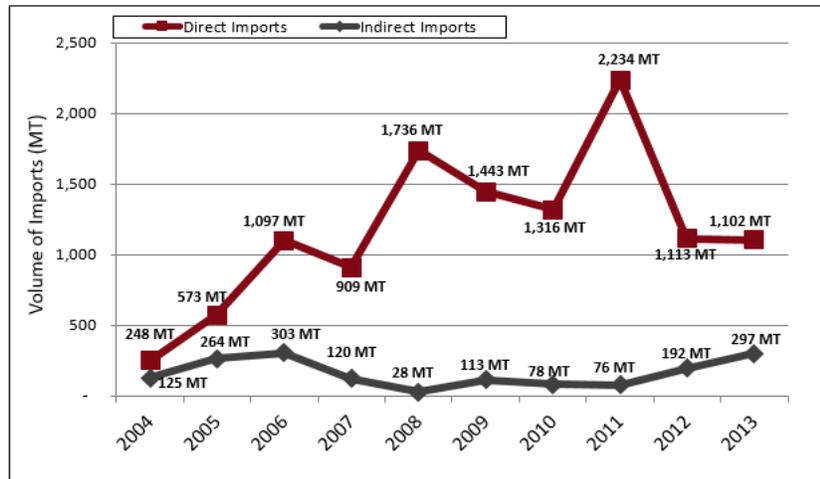


Source: UN COMTRADE

\*Seafood refers to the broad category of "Fish, Crustaceans and Aquatic Invertebrates"

Mexico exported an annual average of roughly 1,100 MT to Hong Kong each year. Mexico’s direct seafood exports to Hong Kong increased steadily from 2004 through 2011, when they reached an all-time high of 2,234 MT, representing 97% of total exports to Hong Kong (Graph 14). Since the peak in 2011, direct exports have dropped sharply to about 1,000 MT a year in both 2012 and 2013.

**Graph 14: Hong Kong Indirect v. Direct Imports from Mexico**  
(MT; 2004-2013)



Source: Hong Kong Customs and Statistics Department

There were also significant year-to-year fluctuations in Mexico’s indirect seafood exports to Hong Kong (i.e. the Mexican exports passed through another country before reaching Hong Kong). From 2004-2012, Mexico

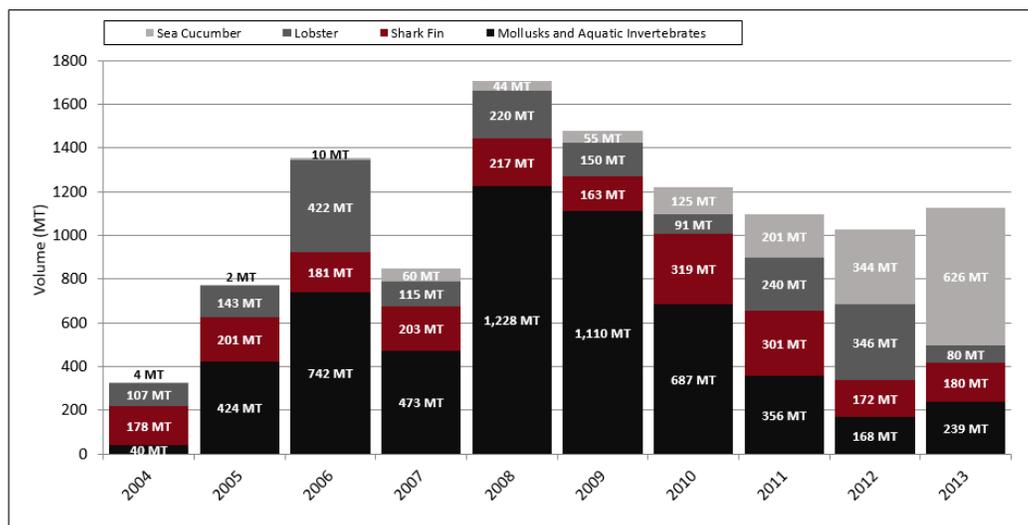
exported an average of 160 MT of seafood indirectly to Hong Kong each year. At their peak in 2006, indirect exports represented 22% of total exports (or 303 MT), quickly dropped to 2% in 2008 and then increased again to 21% of total exports in 2013 (Graph 14).

The Mexico-Hong Kong seafood trade is characterized by lower volumes of high value luxury species. Mollusks and aquatic invertebrates, shark fin, sea cucumber and lobster have consistently been the largest exports of the luxury species in terms volume, followed by clams and abalone. These top four categories make up a very large percentage of the total volume of imports from Mexico into Hong Kong, accounting for an average of 88.5% of the total volume from 2004-2013.

After a peak in 2008 of 1,228 MT in 2008, ‘mollusks and aquatic invertebrates’ imports from Mexico decreased (Graph 15). One possible explanation for the reduction of imports in this category is a change in the classification of goods in 2012. In 2012, ‘mollusks and aquatic invertebrates’ simply became ‘mollusks’ and several of the ‘aquatic invertebrates’ became their own product category. Sea urchin, jellyfish and new classifications of sea cucumber also appeared in 2012. Also, a new trade category was introduced that includes ‘fish maw, tails and heads’. This last development likely reflects the increased volume and value of the curvina golfina swim bladder trade. Based on conversations with seafood wholesalers in the Nueva Viga fish market in Mexico City, Chinese traders have begun to secure sources of swim bladder from species that were not traditionally known for their swim bladder, including bagre bandera (*Banera marinus*), a type of catfish.

Another notable development was the significant jump in Hong Kong’s annual imports of Mexican sea cucumber, from an average of 5.3 MT from 2004-2006, to an average of 390 MT from 2011-2013 (Graph 15). In 2013, sea cucumber became Mexico’s largest luxury seafood export to Hong Kong at 626 MT (Graph 15).<sup>36</sup>

**Graph 15: Hong Kong Top Seafood Imports from Mexico by Volume (MT, 2004-2013)**

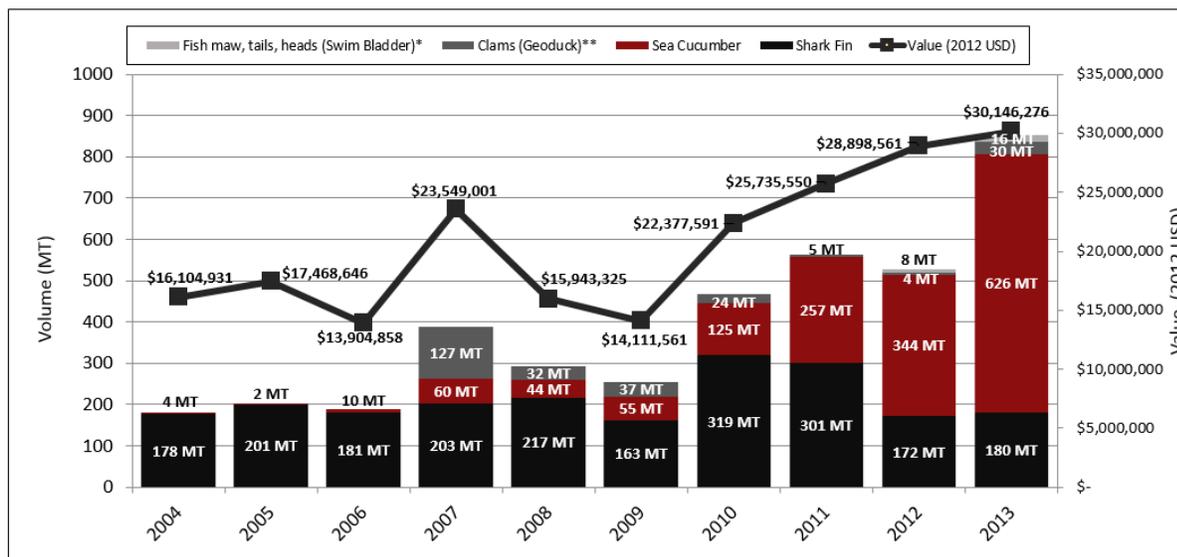


Source: Hong Kong Customs and Statistics Department

Excluding lobster, mollusks and invertebrates, the aggregate export value of the luxury focus species shark fin, sea cucumber, clams (includes geoduck) and fish maw, tails and heads (includes swim bladder) from Mexico to Hong Kong has risen significantly since 2009, reaching a total of \$30.1 million in 2013 (Graph 16). Sea cucumber is the main driver of increased volume and value of luxury focus species imports to Hong Kong from Mexico.

<sup>36</sup> Although not present in official trade data set used to create Graph 16, there is evidence showing that Mexico has also become one of the largest exporters of jellyfish to Hong Kong. Please see the Feature, “Blue Gold and Jellyfish B(l)oom of 2012.”

**Graph 16: Hong Kong Imports of Luxury Focus Species from Mexico**  
(MT; Thousands of 2012 USD; 2004-2013)



Source: Hong Kong Customs and Statistics Department

\*Swim bladder does not have its own product specification and is grouped into the larger category 'fish heads, tails and maws'

\*\*Geoduck does not have its own product specification and is grouped into the larger category 'clams'

Luxury focus species' import prices have remained relatively constant since 2004 (Table 8). Shark fin has held the highest average price over the ten-year period; however its price dropped by 49% in 2013. An interview conducted with a vendor at the Nueva Viga Fish Market of Mexico City revealed that shark fin prices began to fall a year and a half ago due to decreased consumption. News stories published in August 2013 in the state of Tamaulipas on the Gulf of Mexico reported that many exports of shark fins were canceled in 2013 (shark fins are first sent to Mexico City before exported to the Asian market) as the price received by the Tamaulipas fishermen fell from \$45/kg to \$15/kg.<sup>cxxiv</sup>

This apparent decrease in demand for Mexican shark fin may have created an increase in demand for another luxury product often used in banquet soups: swim bladders. Because swim bladder (fish maw) is currently grouped with fish tails and heads in the HS codes, it is likely that reporting of the true value of this product is being diluted; for example, CapLog observed swim bladder prices in Hong Kong markets for between \$32-\$2,119/kg.

**Table 8: Changes in Price of Luxury Focus Species Imports from Mexico**  
(2012 USD/KG; 2004-2013)

SPECIES	AVERAGE PRICE	% CHANGE IN PRICE
Sea Cucumber	\$ 45.09	31%
Clams (Geoduck)*	\$ 10.06	31%
Shark Fin	\$ 71.18	-21%
Fish maw, tails, heads (Swim Bladder)**	\$ 52.22	-19%

Source: Hong Kong Customs and Statistics Department

\*Geoduck does not have its own product specification and is grouped into the larger category 'clams'

\*\*Swim bladder does not have its own product specification and is grouped into the larger category 'fish heads, tails and maws'

## THE MEXICO-CHINA SEAHORSE TRADE

Dried seahorse powder, which is often dissolved in wine or soups, is valued in traditional Chinese medicine, for its perceived role in improving kidney function, fertility and circulation.<sup>CXXV</sup>

In Mexico all wild seahorse are 'subject to special protection' under the *NORMA Oficial Mexicana NOM 059*<sup>37</sup> and the commercial harvest, transport, storage, sale and trade of wild seahorse have been illegal in Mexico since 2010.

However, the illegal Mexico-China seahorse trade appears to be on the rise. According to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Mexico exported 200kg of seahorse (*Hippocampus erectus*) in 2010 and 900kg in 2011 to Hong Kong. CITES also reports the confiscation of 1,641 seahorse of Mexican origin between the years of 2009-2011.

**Table 9: Hong Kong Imports of Dried Seahorse from Mexico**  
(MT & 2012 USD/KG; 2010-2011)

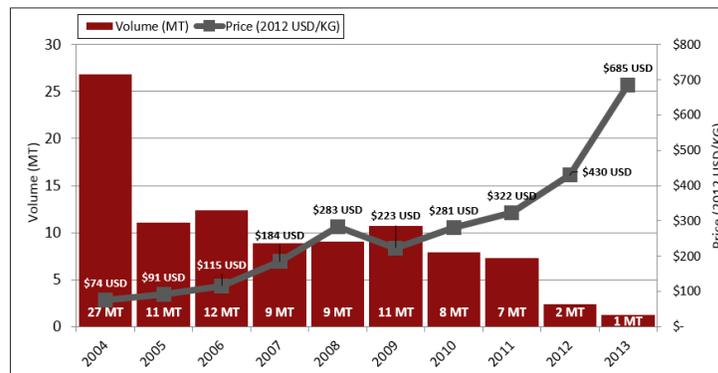
	2010	2011
<b>Volume (MT)</b>	0.2	1.4
<b>Value (2012 USD)</b>	\$ 63,423	\$274,825
<b>2012 USD/KG</b>	\$ 317	\$ 201

Source: Hong Kong Customs and Statistics Department

Data from the Hong Kong Customs and Statistics Department also suggest that there may be a growing trade in Mexican seahorse that is greater than what is being reported by CITES. Table 9 shows a 600% increase in Hong Kong's Mexican dried seahorse imports from 0.2 MT to 1.4 MT between 2010-2011. Considering dried seahorse weigh about two grams per unit, these numbers are quite significant.

Hong Kong's total imports of seahorse from all sources has declined in volume but risen drastically in total value since 2004, reaching a recorded \$685 million in 2013 (Graph 17).

**Graph 17: Aggregate Hong Kong Imports of Seahorse, All Sources**  
(MT & 2012 USD/KG; 2004-2013)



Source: Hong Kong Customs and Statistics Department

Additional data obtained from news sources suggests that, despite decreases in import volumes, demand for dried seahorse is still high and illegal trade is one method of meeting this demand. In May 2013, a joint operation carried out by CONAPESCA and the Servicio de Administracion Tributaria (SAT), the Mexican equivalent of the US Internal

<sup>37</sup> NORMA Oficial Mexicana NOM-059-SEMARNAT-2010, Protección ambiental-Especies nativas de México de flora y fauna silvestres-Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo.

Revenue Service (IRS), raided a shipping container with over 78,000 dried seahorse in the port of Ensenada. The shipment, which was accompanied by nearly 900,000 dried sea cucumber, a thousand cases of dried and frozen swim bladder, along with 42 bales of shark fin and an unspecified quantity of curvina golfina and cannonball jellyfish.<sup>cxvii</sup> According to Alibaba.com dried seahorse originating from Mexico sell for \$25-\$30 USD per unit, meaning that just the 78,000 dried seahorse alone were worth \$2.3 million.

Similar stories exist from across the globe. In August of 2012, more than 16,000 seahorse destined for East Asia and valued at \$140,000, were confiscated in Peru. Just a day before this discovery, two Chinese individuals were allegedly discovered trying to hide 300 seahorse in a shipment of shark fin.<sup>cxviii</sup> CITES reports 2,578 seahorse bound for China, within origins in Peru, were confiscated in the Netherlands in February of 2013 and 500 specimens originating from Guinea were seized in Belgium in August of 2013.<sup>cxix</sup> Of course, these were only the shipments that were discovered, and with the small size and ease of transport, the illegal seahorse trade is in all probability much larger than implied by the scattered anecdotes of shipment seizures.

### 4.3 Mexico-China Seafood Trade Channels and Trends

- *While direct seafood trade between Mexico and Mainland China is rising, Mexican luxury seafood may pass through a number of indirect channels before reaching the destination market, some of which are illegal. Nearly half of all indirect seafood trade from Mexico to Hong Kong first flows through the US due primarily to Mexico's dependence on US transportation infrastructure.*
- *The majority of Mexican seafood exporters interviewed said that Mainland China and Hong Kong have become significantly more important trading partners over the past decade, but that generally they did not fully understand the destination market.*
- *Mexican seafood exporters have responded to Chinese demand by investing in physical capital and marketing, securing new Mexican supply and ensuring compliance with Chinese import regulations.*
- *Seafood is one of the most highly regulated and costly imported food categories in Mainland China. In 2012, additional food safety and certification requirements for the import of seafood into China were implemented, significantly impacting Mexican exporters.*

#### a) **Trade infrastructure for Mexico's luxury seafood exports**

Mexican seafood exports travel through several distinct channels on route to market in China. These channels can generally be broken up in to three categories: i) Direct shipment to Mainland China or Hong Kong; ii) Indirect shipment via the US and other countries; and iii) Indirect shipment through 'gray channels'. Each of these channel types meets a different set of exporter needs. Direct shipment of seafood products between the two trading partners has been increasing as investments in trade infrastructure in Mexico and China are made.

#### *Direct Shipment:*

Container ships carrying frozen and dried Mexican seafood make regular trips between the western Mexican ports of Ensenada and Guaymas to the Chinese ports of Shanghai, Dalian, Qingdao and Hong Kong.

Different seafood products are exported through different routes, depending upon specific logistical needs or access to infrastructure. While dried goods can be packed in a standard shipping container, frozen fish requires a refrigerated container and live seafood is exclusively shipped by airfreight. Higher value live products, like Mexican geoduck, also travel via airfreight. According to one of the geoduck exporters interviewed, 80% of their product was flown direct to Hong Kong from LAX on Cathay Pacific flights. Geoduck leaving Ensenada takes roughly 40 hours to reach its buyers in China.

*"We rely on the passenger planes, but we sometimes have to fight for space. The airlines give preference to passengers and have taken our boxes off in the past. This is a major problem with live seafood!"*  
- Live shellfish exporter from Baja California

The choice of ports, as well as the type of transport also impacts the travel time. Containers leaving Ensenada take roughly 28-30 days to reach Chinese ports, while shipments leaving the port of San Diego take only 18-20 days to reach China and airfreight can get product to buyers in as little as 30 hours after ordering (Table 10). Of course the costs of each of these shipping methods vary according to speed and handling requirements.

Investment in Mexican shipping ports over the past decade has drastically increased the overall trade volume between Mexico and East Asia.<sup>CXXX</sup> With California deep-water ports reaching capacity and US wages rising, Mexican ports present a comparatively inexpensive alternative for Chinese traders looking to ship retail goods to the North American markets. As retail flow from China to Mexico increases, there is more capacity for Mexican exporters to ship all types of goods, including seafood, back to China.

**Table 10: Major Ports in Mexico and US for Seafood Export to China**  
(USD; Days; MT)

	GUAYMAS	ENSENADA	SAN DIEGO
<b>Cost per Container</b>	\$5,000	---	\$4000-5000
<b>Time to China</b>	25-35 days	28-30 days	18-20 days
<b>Weight per Container</b>	---	Up to 30 MT	18 MT

Source: Interviews with Mexican Exporters 2013

Recent expansions of Mexico’s deep-water ports have yielded cost savings to Mexican exporters. In 2013 the Mexican government announced a 465 million peso public-private investment partnership to increase the capacity of the Sonoran port of Guaymas from 8 million MT in 2000 to over 12 million MT by the year 2016. One Mexican seafood exporter based in Guaymas is already reaping the benefits of this infrastructure investment. By shipping directly to Hong Kong, Dalian and Guangzhou from Guaymas, instead of the port of Ensenada, the firm is saving an average of \$2,000 per shipping container.

Expanded air service between the western cities in the US and Canada and Chinese cities may foreshadow a trend in Mexico. For example, in 2011 China Southern Airlines launched a dedicated cargo route between Vancouver and Shanghai four days a week to handle the large volumes of fresh seafood traded between Canada and Mainland China.<sup>CXXXI</sup> All of the Mexican seafood exporters interviewed for this report that ship luxury product to Hong Kong via airfreight do so through the LAX airport, citing a lack of airfreight options in Mexico. Aeromexico operates a direct flight from Tijuana to Shanghai three times a week. As China-Mexico and Hong Kong-Mexico trade increases, airlines will likely consider adding additional direct flight routes between the two countries.

Investments in Mexican shipping ports, as well as investments for longer runways and direct flights between the west coast of Mexico and China would likely serve to decrease the cost and time associated with shipping high value live and fresh luxury seafood items to China.

*Indirect Shipment:*

As mentioned above, Mexican exporters, particularly those located in northwestern Mexico, commonly ship product to Hong Kong and Mainland China through the US ports of San Diego and Los Angeles. Exporters based in the Gulf of Mexico and Yucatan peninsula may first ship product to Florida, before it catches a plane to China.

Beyond the standard shipping rates for containers, there are other costs associated with shipping Mexican product through the US. For example, long wait times at border crossings and arduous paperwork requirements increase both shipping costs and the duration of the freight. Another issue confronting Mexican exporters wishing to ship product through the US to China is the US highway weight restrictions that prohibit container trucks with more than 18 MT of cargo from using US roads. As a result, Mexican containers leaving US ports

**Vietnam-China Border Crossing**



Source: © WCS Vietnam.

are not as full as containers leaving Mexican ports.

Mexico’s use of intermediary countries has increased in recent years. In 2004, 50% of all Mexican exports going to Hong Kong traveled by indirect trade channels. Between the years of 2007-2011 the percentage of indirect exports fell to an average 6%, and then climbed again to 27% of the total exports in 2013.<sup>cxxxii</sup>

Not surprisingly, the Hong Kong Customs and Statistics Department reports that the US facilitates the largest percentage of Mexico’s indirect exports to Hong Kong, with nearly half of all indirect seafood trade flowing through US ports, or 792 MT from 2004-2013.<sup>cxxxiii</sup> <sup>38</sup> Compared to a low of 10 MT in 2004, the volume of Mexican seafood traveling through the US before reaching Hong Kong rose 2,720% to 282 MT (or about 90% of all indirect exports) in 2013 (Graph 18).

Mexican seafood also frequently travels through other Asian countries en route to Hong Kong. Taiwan is the second most important trade intermediary between Mexico and Hong Kong, handling over 35% of Mexico’s indirect seafood trade to Hong Kong, or 583 MT from 2004-2013. Ports in Mainland China, the Philippines and Canada oversee the remainder of Mexico’s indirect seafood exports to Hong Kong.<sup>cxxxiv</sup>

*Trampoline Countries and Gray Channels:*

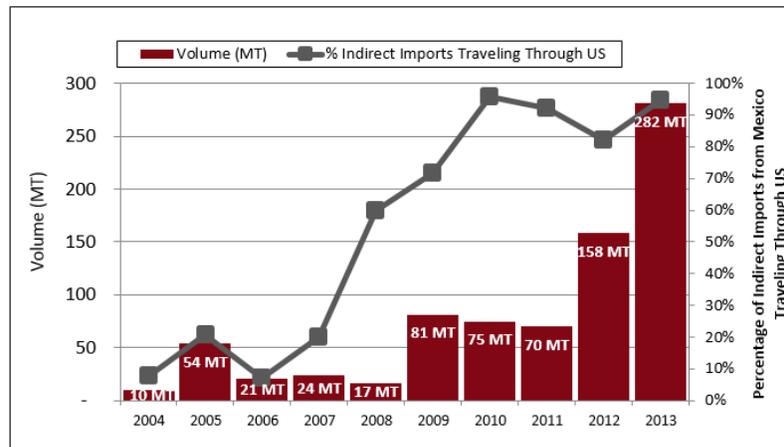
High import tariffs and arduous regulations in Mainland China force less scrupulous seafood importers to seek alternative trade routes.<sup>cxxxv</sup>

Several Mexican seafood exporters interviewed confirmed that certain Chinese seafood import companies have developed strategies to evade Mainland China's steep seafood import duties. One such strategy involves shipping Mexican seafood legally to Vietnam, which borders China and has comparably low seafood import taxes and then re-exporting these goods through the Vietnamese-Chinese border.

The northeastern Vietnamese province of Quang Ninh shares a 170km border with China’s Guangxi Zhuang Autonomous Region (GZAR) and is a well-documented entrance point to China for wildlife smugglers. The United Nations Office on Drugs and Crime is reportedly “very concerned about lax border controls at Mong Cai [the largest border city in Quang Ninh],” and one of the largest Vietnamese-Chinese border crossings.<sup>cxxxvi</sup> One study recorded over 25,000 instances of vehicles crossing into China illegally through Quang Ninh borders in one 24-hour period. The analysis concludes that “over 90% of all products (both legal and illegal) traded in Mong Cai between Vietnam and China are passing

“Since the Chinese government frugality campaign, our shipments to China have declined. Instead, we are sending more to Vietnam, although this product probably ends up in China.”  
- Mexican Seafood Exporter

**Graph 18: Volume of All Mexican Seafood Products Traveling through US Prior to Reaching Hong Kong (MT, 2004-2013)**



Source: Hong Kong Customs and Statistics Department

<sup>38</sup> There are also differences between which luxury focus species pass through the US on their way to Hong Kong from Mexico. From 2004-2013, all exports of “other marine crabs” from Mexico passed through the US before reaching Hong Kong. A significant proportion of sea urchin (54% of all Mexican exports), fish maw, heads and tails (30%) and sea cucumber (25%) also passed through the US before entering Hong Kong. (Source: Hong Kong Customs and Statistics Department)

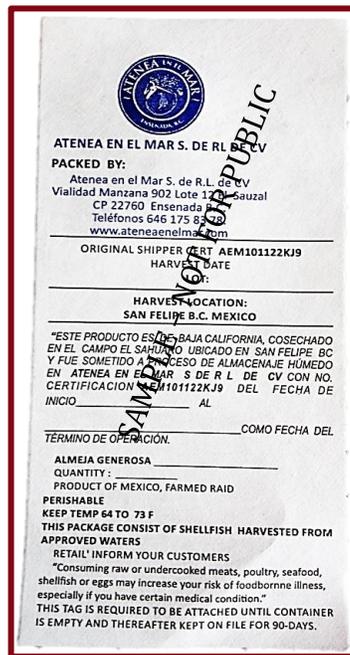
through illegal crossings.”<sup>cxxxvii</sup>

The use of such 'trampoline countries', as they're sometimes called in Mexico, to circumvent Chinese import taxes likely contributes to a significant underreporting of Mexican seafood exports to China. Looking closely at Mexico's seafood trade with Vietnam could provide a general sense of the potential scale of this 'trampoline' seafood. According to UN Comtrade data, the value of Mexico's seafood exports to Vietnam increased by more than 6,000%, from \$31,214 to \$20.5 million during 2007-2012.

Mexican exporters interviewed for this project also mentioned the practice of 'certificate counterfeiting', in which Chinese importers will enter into legal trade arrangements with Mexican seafood exporters to procure copies of the necessary trade certificates. Exporters may use these legitimate certificates to create counterfeit copies, which they can later use to export illegally harvested Mexican seafood products.

As part of a larger crackdown on corruption in China, the government has begun taking steps to discourage illegal imports, implementing stricter import controls and increased border monitoring. In 2012, Shanghai customs officials arrested 50 individuals involved in seafood smuggling operations worth around \$101 million – an estimated \$12.3 million in lost tax revenue for China.<sup>cxxxviii</sup>

A Mexican seafood exporter, aware of this crackdown, noted that since the Chinese have increased enforcement of the Vietnam-China border, the buyer has noticed a marked decrease in orders from Vietnamese clients. According to data provided by the Mexican exporter, while exports to Mainland China fell from 2011-2012, exports to Vietnam rose dramatically from 1 MT to 131 MT between 2011-2012, but then fell by 85% to 19 MT in 2013 (and continued to decline to 4 MT in 2014), coinciding with the crackdown.



### Mexico Geoduck Certificates of Origin

<b>ZONA DE CAPTURA</b> San Felipe, Mexicali, Baja California México		<b>ATENEA EN EL MAR S. DE R.L. DE C.V.</b>  <b>NO. DE CERTIFICADO</b> AEM101122J9 Vialidad Manzana 902 Lote 12 El Sauzal, Ensenada, Baja California	
<b>LOTE:</b>  <b>FECHA ELABORACION:</b>		<b>PRODUCTO</b> <b>ALMEJA GENEROSA</b>  <b>NOMBRE COMÚN:</b> Almeja generosa <b>NOMBRE CIENTÍFICO:</b> Panopea globosa	
<b>PESO NETO:</b>		<b>MÉTODO DE PRODUCCIÓN</b> Extracción por buceo semiautónomo	<b>MODO DE PRESENTACIÓN</b> Producto vivo
<b>NO. PIEZAS:</b>			

Indeed, stricter import controls have incentivized some traders to switch to purchasing through regular, legal trade channels. For example, the live seafood trade has formalized significantly in recent years, in response to stricter import controls and the availability of regular air freight services to Shenzhen, Guangzhou and Shanghai.<sup>cxxxix</sup> Increased enforcement of import laws and improved access to modern infrastructure could help bring some of illegal trade into the formal marketplace. On the other hand, increased regulations, tariffs and bureaucracy without adequate enforcement, will continue to create incentives for seafood importers to participate in illegal trade channels.<sup>cxl</sup>

**MEXICO'S EVOLVING SEAFOOD TARIFF CODES**

Since the adoption of the harmonized tariff code system in 1988, countries have regularly updated their code system to account for new product types, improve data capture on products of note and to decrease confusion. Mexico is no exception. In 2012, there were around 21 changes in its tariff codes for seafood alone. These changes

tend to create unique codes for products that had previously been grouped into less specific categories. For example, in 2012, the sub-chapter “aquatic invertebrates” was created, separating sea cucumber, sea urchins and jellyfish from mollusks and aquatic invertebrates. The subcategory of “other mollusks, live, fresh or refrigerated” was further broken down to separate out “clams, cockles and ark shells, live fresh or refrigerated.” Geoduck falls under the product classification of this category. New subcategories were also created for “shark fin” and “heads, tails, and swim bladders of fish.”

There are still a few groupings that make it impossible to track the exports of specific products from Mexico to China. For example, geoduck has yet to be separated from the aforementioned general grouping of “clams, cockles and ark shells”. CapLog overcame this obstacle by using trade data from the Hong Kong Customs and Statistics Department in order to analyze Mexican exports. Hong Kong has traditionally been a large volume importer of luxury seafood products and to meet the needs of its customs department the government has been tracking imports of several of the luxury focus species, such as shark and sea cucumber, for at least the past decade.

Mexico may benefit from following Hong Kong’s example by creating specific product codes for newly popular seafood products like geoduck and swim bladder. With access to better trade statistics, Mexican government officials, private sector actors and public groups would be better able to analyze the flow of high-value (and sometimes at-risk) seafood products.

#### **b) Mexican seafood export companies**

Seafood exports are an important and growing industry in Mexico. The Mexican government sees the sector as a potential engine for growth and is investing in a number of seafood export promotion activities. ProMéxico is the primary entity responsible for promoting exports and attracting foreign investment in Mexico. ProMéxico also administers the Directory of Exporters (DIEX), which foreign companies may use to search for Mexican products and services. There are a total of 67 seafood exporters registered in the DIEX, with the highest concentration of seafood exporters is in the Gulf of California. Baja California currently has the largest number of registered firms at 22; and Sinaloa and Sonora follow with 11 firms each. Of the 67 registered seafood exporters, only 15 report exports to China, Hong Kong and Taiwan. These firms are concentrated in the Gulf of California region (Map 2). Only 4 firms have listed the export of high value seafood species to China, Hong Kong and Taiwan, alluding to the underutilization of this resource.

Another online directory called MexBest has been developed to promote Mexican exports in coordination with Mexico’s SAGARPA. MexBest is funded by ASERCA, Mexico’s Agriculture Development and Support Agency. The MexBest directory currently lists approximately 30 Mexican seafood exporters, far fewer than the actual number of companies in the sector. The world’s largest e-commerce portal, Alibaba.com, may provide a more accurate count of the scale of the industry. In early 2014 there were over 125 Mexican vendors advertising luxury seafood products through Alibaba.com.

**Map 2: Location of Seafood Exporters in the ProMéxico DIEX**



### **THE PROMEXICO DIRECTORY OF EXPORTERS (DIEX)**

The Directory of Exporters (DIEX) offered by ProMéxico is a database that foreign companies can use to look for Mexican products or services and conduct outreach with the contact information provided. According to the ProMéxico website, this database is the best resource for small to medium-sized companies seeking to promote their product internationally. Registration is free and completely voluntary. Exporters wishing to have their firm's product offerings as well as contact information listed in the database simply need to fill out a form, available in Excel or PDF format on the ProMéxico website:

[http://www.promexico.gob.mx/es\\_us/promexico/Incorporarse\\_al\\_directorio](http://www.promexico.gob.mx/es_us/promexico/Incorporarse_al_directorio)

Several significant improvements to user-friendliness, English-Spanish translation, and the organization of the directory's contents, however, need to be made before the DIEX may be fully harnessed as a powerful tool for exporters seeking to promote their product to Chinese buyers.

### **ALIBABA.COM**

Upon hearing "Ali Baba," most people's thoughts drift to the Arabian tales of *Ali Baba and the Forty Thieves*. However an e-commerce company in China is quickly stealing the spotlight. Currently 50% of online sales in China occur through the ever-expanding e-commerce portal.<sup>cxli</sup> With more than 500 million customers and 800 million product listings, the company has become the world's largest online retailer. Despite being so large, its name is not very well known outside of China.<sup>cxlii</sup> That is quickly changing. Alibaba.com is the subject of what may become the largest initial public offering in history, with an estimated IPO of \$20 billion.

The website is a popular e-commerce platform in China, and the trade of luxury seafood products from Mexico has an active presence on the site. There are currently 127 Mexican vendors listed for the sale of sea cucumber, jellyfish, fish maw, geoduck, sea urchin or yellow croaker. The number of vendors present on Alibaba far exceeds the number of registered export firms listed on ProMéxico's Directory of Exporters (DIEX). It is also interesting to note that as of 2009, Alibaba no longer participates in the advertising or sale of shark fin.

Some of the product descriptions and vendor quotes reveal an increased awareness of trade of high value species between Mexico and China and a desire to form trade relations. One Mexican sea cucumber vendor states, "We are looking for long term business because in Mexico we have enough product to supply Asian markets for years" while another states, "We are looking to build a long-time relationship with a buyer in China." And according to one Shanghai-based vendor, "We have a contract with a Mexico fisherman [a geoduck fisherman] down Baja California."

With tools like Alibaba.com, many small Mexican firms or fishing cooperatives have the opportunity to develop direct relationships with Chinese seafood importers.

### Screenshot of Mexican Sea Cucumber Listed in Alibaba.com



### c) Mexican exporters and their perceptions of Chinese seafood buyers

All of the Mexican seafood exporters interviewed for this study commented that China and Hong Kong have become significantly more important trading partners over the past decade. Of the seven firms interviewed that export one or more of this report’s focus species, five began their trade relationships in the past 10 years.

Despite the perceived importance of Chinese demand, exporters generally commented that they did not fully understand the destination market. Some Chinese companies such as Hong Kong-based Dragon Development International Ltd provide website content in both English and Spanish and state that they actively seek “valuable and long term based supplier[s] all over the world”<sup>cxliiii</sup>, but this level of transparency and commitment to forming long term-relationships with Latin American suppliers is unique.

On the whole, Mexican exporters struggle to form secure relationships with Chinese buyers. Being able to navigate relationships with Chinese counterparts is very important, however, as evidenced by the fact that the majority of the Mexican exporters interviewed agreed that Chinese buyers were ‘very cost conscious’, the Chinese market was relatively volatile, and that prices and demand often shift drastically from year to year. Highlighting how quickly demand for a particular product can change, one firm reported that in 2010 they were receiving as many as six emails a day from Chinese firms interested in buying chano (*Chanos chanos*); today that same firm gets fewer than five emails a week.

As Mexican seafood exporters become increasingly comfortable with dealing with Chinese buyers, some of this variability can be anticipated. For example an exporter based in Guaymas noted that prices tend to rise just before the Chinese New Year holiday in mid-February and that all trade with the Chinese grinds to a halt during Golden Week in October.

What is clear is that the Chinese buyers typically have the leg up in trade dealings. As one Sonoran seafood exporter put it: “We now understand that we are going to do business with the Chinese when they want to, not when we want to.”

As with any emergent industry, it also takes time to develop trust in business relationships. Based on the findings from interviews with Mexican export firms, it appears that there is still significant distrust between Mexican seafood exporters and their Chinese counterparts.

“There are a lot of cultural problems. Different ways of thinking. I took a course about international commerce. The Chinese are less formal. You cannot always trust them.”  
 - Seafood Exporter based in Guaymas, Sonora

“Working with the Chinese is like trying to get a tiger to smile.”  
 - Seafood Exporter based in Ensenada, Baja California

One exporter reported that one of their first Chinese trade partners used early trade relationships to obtain copies of origin and export certifications required to export Mexican seafood. According to the owner of the firm, the Chinese importer made photocopies of the legal paperwork, which they then altered to import illegally sourced Mexican product. This seafood business owner believes that this is a common practice among Chinese luxury seafood importers. When asked about this scheme, other Mexican exporters agreed that it was a likely scenario.

Another exporter mentioned Chinese buyers who work with port officials in Hong Kong to intentionally hold up the delivery of containers of Mexican seafood, which can damage the quality of the product. When the shipment is finally unloaded, if the quality is not up to the standard that the Chinese importer ordered, they can withhold a portion of the payment to the Mexican exporter.

Regardless of whether these anecdotes are accurate representations of reality, they do underscore some deep-seated suspicions held by several prominent Mexican seafood exporters.

According to the owner of a Sonoran export company, however, these suspicions are not entirely one-sided:

“In the beginning, it was really easy, a lot of trust. I found them [Chinese buyers] through the internet, a list of importers in China. We built our website to reach out to China. Really very easy. Then they started writing us. No requirements, no paperwork. They paid me a percent up front in exchange for photos of the product. However, in 2011, I think that some Mexicans tricked the Chinese by sending fake shipping orders. Now the Chinese are wiser. They ask for more product information and letters of credit. It makes it harder to complete the orders.”

#### **d) Strategies to adapt to changes in Chinese seafood demand**

Several of the Mexican seafood processors and exporters interviewed for this project reported having invested in their businesses over the past decade to tap into growing Chinese demand for seafood. These investments can generally be divided into four categories: i) Compliance with Chinese import regulations; ii) Investments in physical capital (e.g., processing equipment); iii) Securing new supply; and iv) Investments in marketing.

##### *Compliance with Chinese Import Regulations:*

As a result of new trade restrictions implemented by the Chinese General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) in 2012, many Mexican seafood exporters experienced significant business losses. According to interviews with several exporters that were impacted, dozens of containers of Mexican seafood did not meet the new requirements and were not allowed to enter China. This resulted in significant losses for several of the exporters interviewed, both directly (e.g., lost shipments) and indirectly (e.g., decreased demand). One interviewee estimates that their firm lost close to \$20,000 due to the change in regulation. There was agreement among all interviewees that Mexico’s Federal Commission for the Protection Against Sanitary Risk (COFEPRIS) did not effectively communicate the changes in export requirements to the Mexican seafood industry.

Mexico’s direct seafood exports to China were negatively impacted, as demonstrated by a nearly 50% drop in direct seafood exports from 2011 to 2012<sup>cxliiv</sup>, presumably as a result of the establishment of the new export restrictions. But while direct exports declined, indirect exports to China appear to have increased, as Chinese seafood importers and Mexican seafood exporters sought alternative trade routes to meet demand.

Mexican seafood companies did not take long to respond to the new regulations, however, and as of September 2013, 80 Mexican processing plants were certified to export seafood to China.<sup>cxlv</sup> One firm that has recently received certification commented that the certification took three months from start to finish and cost the company roughly \$20,000, including the travel expenses of the government inspectors (e.g., flights, rental car, hotel, meals, etc.).

## BLUE GOLD AND THE MEXICAN JELLYFISH B(L)OOM OF 2012

In the early summer of 2012 a ‘bloom’ of cannonball jellyfish (*Stomolophus meleagris*) floated towards the Upper Gulf of California. The arrival of these animals en masse coincided with new interest in commercializing the species from East Asian buyers. With no permit governing the harvest of jellyfish in Mexico, the residents of Golfo Santa Clara, Puerto Peñasco and other towns along the Sonoran coasts harvested huge volumes of this species, which were previously considered a nuisance to fishermen. The jellyfish were so abundant that fisherman using dip nets and shrimp nets could fill their eight meter fiberglass *pangas* (‘small boats’) in less than two hours. Even non-fishermen got in on the action and eyewitnesses describe *abuelitas* (‘grandmothers’), collecting hundreds of pounds of jellyfish that had washed along the Upper Gulf’s beaches.

At the end of the short-lived season, Sonoran towns harvested close to 19,000 MT of live jellyfish.<sup>cxlvi</sup> Agents of the East Asian buyers and Mexican entrepreneurs erected makeshift above-ground pools across Sonora’s beaches, where the jellyfish were brined, before being sun dried. The brining and drying process removes roughly 70% of the animals’ body weight and Sonora’s 19,000 MT of fresh catch resulted in an estimated processed weight of 5,640 MT.<sup>cxlvii</sup> At a reported \$3,500/MT, the first year of this nascent fishery netted the state of Sonora nearly \$20,000,000 in new fishery export revenues.<sup>cxlviii</sup> Seemingly overnight, Mexico became China’s second largest jellyfish supplier, providing 21% of the nation’s jellyfish imports, behind Bahrain with 27%.<sup>cxlix</sup>

### Jellyfish Catch in Golfo Santa Clara, Mexico



Source: Carlos Tirado

Eager to capitalize on this new revenue source, existing seafood processors began investing in new processing capacity. Firms paid for Chinese export certification and specialized vats with conveyer belts to quickly handle and process large volumes of jellyfish. One study conducted in 2013 found that there were 20 plants along the Sonora coast with jellyfish processing capacity and 9 firms set up to market the product to Asia.<sup>cl</sup>

To the disappointment of many of these entrepreneurs, 2013 did not see a repeat of the previous year’s jellyfish bloom. Approximate landings in 2013 were 12,500 MT.<sup>cli</sup> Although there was an early arrival of jellyfish in Sonora in late March 2014, the capture of jellyfish was temporarily suspended due to the arrival of a cold front. In addition, biological monitoring revealed that a new generation of jellyfish had arrived and the best option was to give the specimens time to reach a larger size for capture. During the first week of the season, fisheries officers detained six *pangas* and three freight vehicles which could not prove the legal origins of their capture.<sup>clii</sup> Predictions for the 2014 capture are around 13,000 to 15,000 MT.<sup>cliii</sup>

### Mexico Jellyfish Operations in Bahía Kino, Sonora



Source: Pedro Zapata

Sources close to the Mexican government report that new rules governing jellyfish harvest may be released in 2014. Meanwhile, fishermen in Sonora have created a set of self-imposed rules that seek to better manage the resource, such as implementing a daily landings quota of four tons and minimum capture sizes. The collective action of the fisherman is said to have been applauded by the Government of Sonora.

### *Investments in Physical Capital:*

Mexican seafood processors have been quick to identify and respond to changes in Chinese seafood demand. As illustrated in the Feature, “Blue Gold and the Mexican Jellyfish B(l)oom,” Mexican seafood firms have demonstrated the initiative, vision and access to capital to enable them to nimbly leverage new demand trends.

In CapLog’s experience in the Upper Gulf, this nimbleness is not unique to jellyfish. Mexico’s geoduck fields have only been commercially harvested since 2002. Since then, the industry has grown exponentially, with harvests up from 40 MT in 2003 to 1,241 MT in 2010.<sup>cliv</sup> In 2014 there were 23 businesses offering Mexican geoduck through the popular e-commerce platform, Alibaba. Given the complicated logistics and infrastructure requirements associated with commercializing live shellfish, these 23 businesses represent a significant mobilization of capital over the past 10 years. Several of these firms that CapLog has toured have made substantial investments in state of the art facilities, with dozens of tanks to store live geoduck and even breeding facilities to produce juvenile geoduck ‘seeds’ in laboratory settings.

### *Securing New Supply:*

As a new market for a luxury seafood product develops, Mexican exporters compete to secure reliable sources of supply. One approach to securing supply is obtaining the appropriate permits to exploit the resource. A firm can gain a significant and in some cases lasting competitive advantage by being one of the first to obtain legal permission.

For some species, like geoduck or jellyfish, the demand for the product surfaced before a fishery management regime was in place. In the case of jellyfish, this led to a fishery with no limits on the number of fishermen; with geoduck there was a systematic allotment of *permisos de fomento* (‘development permits’) in advance of a commercial permit system. Early actors in the geoduck fishery were able to secure exclusive harvest rights to huge swaths of geoduck territory. In fewer than 10 years, every kilometer of coastal access in Sonora and Baja California has been divided up between 89 geoduck harvest permits. Several firms own more than one permit.

In addition to securing legal permits, firms that own fishing boats may have an advantage over firms that do not. Firms that are not vertically integrated may exert other types of pressure over fishermen, which can help them secure a stable source of the new commodity. For example, processing plants that provide working capital loans or supply fishing inputs (e.g., gasoline, ice, etc.) directly to fishermen, often do so in exchange for exclusive delivery rights.<sup>39</sup>

Increased supply is not always good for the Mexican seafood exporters. As catch volumes rise, quality often suffers. One exporter of chano provided an interesting example of this: “Once it was known that the Chinese wanted chano, the industrial fleet began to catch it. They keep the chano frozen in the hold during the multiple day fishing trips. This makes the chano turn grey and the Chinese importers say it has a weird smell. As a result, during the last two years the demand for chano has gone down. Chinese buyers are now saying the Mexican chano isn’t good. I think it is because of the shift from *panga* (‘small boat’) to *barco* (‘commercial fishing vessel’).”

### *Investments in Marketing:*

Mexican firms have also been proactively investing in marketing toward the Asian market. Each of the exporters interviewed manage and regularly update their firm’s online presence. Email appears to be the preferred medium of contact between Mexican exporters and their Chinese counterparts. English is commonly the lingua franca in these trade deals, though several Chinese importing companies employ Spanish-speaking agents across Mexico.

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<sup>39</sup> Interestingly, firms that provide these loans do not always charge interest to their fishermen. Instead, the processing plant may structure an implied interest charge into a discount in the price they pay to their indebted fishermen.

ProMexico, an export promotion program funded by ASERCA, Mexico's Agriculture Development and Support Agency, works with Mexican seafood exporters to market their products at international trade shows. ProMexico assisted in the set up the first Mexico Seafood Pavilion at the Boston International Seafood Show in 2010. In 2013 15 Mexican firms attended that show. The following photos present several of the featured booths at the Boston International Seafood Show, including a very popular live geoduck tank, hosted by Atenea en el Mar, an Ensenada based exporter of live seafood, as well as a promotional display from MexBest, another export promotion agency, with various whole frozen fish wearing *sarapes* and *sombreros* and playing assorted mariachi instruments.

ProMexico has over 40 offices worldwide focusing on increasing trade with Mexico, including offices in Hong Kong, Beijing and Shanghai. These offices offer a wide range of programs to support increased trade, from helping Mexican firms navigate product certifications to providing reimbursements to foreign firms interested in attending Mexican trade shows. For example ProMexico will reimburse the travel expenses of 5-10 firms attending the 2014 Baja Seafood Show in Ensenada, Mexico's largest seafood industry show.

#### Boston International Seafood Show



In sum, the Mexican seafood industry has responded to surges in Chinese demand for luxury seafood species by: securing supply, acquiring the necessary trade permits, investing in processing capacity and maintaining both online and physical marketing presences. Furthermore, Mexican firms appear to have access to the capital (from both public and private sources) necessary to leverage new opportunities.

That said, there are clear information gaps that are hurting Mexico's export businesses. Without better access to trade statistics, consumer trend data, information about shifts in trade policies and independent biological research on species of interest, seafood exporters may not be able to transform the boom and bust cycles associated with Chinese demand into long term, stable trade relationships.

#### e) Trade regulations governing the Mexico-China seafood trade

In order to understand Mexico-China seafood trade regulations, it is first helpful to address the larger context of Mexico-China trade relations.

##### *Historic Trade Relations between China and Mexico:*

Since the 1980s, both China and Mexico have been implementing trade liberalization policies, and trade between the two countries has experienced "unprecedented growth."<sup>clv</sup> However, Mexico currently has a trade deficit of over \$50 billion. There is also a significant

"The Mexican government needs to shift their vision of who are the big buyers. It isn't only the US anymore. I want the government to sign a trade agreement with China – it is incredibly important for our business. Chile already has a trade agreement with China – they are our competition."  
- *Seafood Exporter, Ensenada*

"I think at this stage it is too early to talk about a free-trade agreement [between Mexico and China]."  
- *Jose Antonio Meade, Mexican Foreign Minister*

imbalance between the two countries, with China accounting for more than 15% of Mexican imports, while Mexico accounts for just 1.5% of China’s total imports.<sup>clvi</sup>

Trade relations between the two countries have historically been strained as China and Mexico compete directly in several key sectors for access to the US market. As such, Mexico was very reluctant to sign on the entry of China into the WTO in 2001. The relationship between the two countries has improved over time, but, to date, Mexico and China have not signed a Free Trade Agreement. In 2004 the two countries established, the High Level Group (HLG), a bilateral forum led by Mexico’s economy minister and China’s Ministry of Commerce, intended to discuss and resolve trade disputes between the two countries.<sup>clvii</sup>

“The government needs to put the conditions for us to succeed. For example, good management, following the laws, the Chinese take advantage of the disorder in Mexico. We need better Mexican politics to respect the law.”

- *Seafood exporter in Guaymas, Sonora*

Chinese President Xi Jinping met with Mexican President Peña Nieto at Los Pinos<sup>40</sup> in June 2013. Speaking of Mexico’s trade deficit with China, Peña Nieto announced that Mexico wants to “find a greater equilibrium in our trade balance.” While China has expressed interest in signing a free-trade agreement with Mexico, Mexican Foreign Minister Jose Antonio Meade made it clear that Mexico was not yet prepared to take that step. Mexican exporters interviewed over the past six months disagreed, fearing that Mexico was at a disadvantage compared with other Latin American countries such as Chile who have standing trade pacts with China.

“China has a trade policy that is pretty protectionist. The government officials give out permits based on favoritism. It is hard for new Chinese buyers to get import permits.”

“We’ve met interested clients at trade shows, but they sometimes have to wait 2-3 years to get the seafood import permit from the Chinese government.”

- *Seafood exporter in Baja California*

#### *Mexico-China Seafood Trade Requirements:*

Seafood – especially live seafood – is one of the most highly regulated imported food categories in Mainland China. Seafood destined for domestic consumption faces strict phytosanitary controls and high import tariffs, including a duty plus value-added tax (VAT) nearing 25%.<sup>clviii</sup>

Every seafood shipment seeking entry to China is subject to inspection by the Chinese General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), followed by the Tariff office and the Customs clearance office.<sup>clix</sup> Full import licenses (which are required for live seafood, but not for frozen seafood) are available only to a few large state-owned companies and private Chinese companies, and every importing company must place a deposit with Chinese customs for pre-clearance.<sup>clx</sup> In addition to usual documentation like customs forms and bills of lading, the AQSIQ also requires health certificates certifying the safety of live, frozen and processed seafood.

In 2012 the AQSIQ set forth new requirements for the import of seafood products into Mainland China. The changes included modifications in the format of the Health Certificate for Fish and Fishery Products destined to China, requirements for the application of Hazard Analysis and Critical Control Point (HACCP) in manufacturing facilities, and the registration of the facilities on a list administered by AQSIQ.<sup>clxi clxii clxiii</sup>

Mexico’s Federal Commission for the Protection Against Sanitary Risk (COFEPRIS) periodically meets and negotiates with AQSIQ regarding the Chinese requirements for imports of seafood products from Mexico. In April 2011, representatives from COFEPRIS and AQSIQ met for the first time in Beijing in order to discuss the process for certifying Mexican seafood processing plants for export to China. In February 2012, AQSIQ and COFEPRIS came to agreement over the

“I tried to establish our trademark in China. It was so expensive, and I spent two years doing it! \$5000 USD. Plus other costs, I asked for Registered Trademark in China, Hong Kong and Macao.”

“We are at the mercy of the intermediaries and the bureaucrats that certify our products.”

- *Mexican Seafood Exporter*

<sup>40</sup> The Mexican Presidential Palace

Chinese food safety regulatory scheme, and the legal, technical and administrative criteria established by COFEPRIS. The process for certifying seafood processing plants in Mexico for export is the same as for export to the European Union or the United States (with the exception of live seafood products like mollusks). Live seafood products are subject to additional food safety controls including the regular testing of samples for biotoxins, bacteria and heavy metals.<sup>clxiv</sup>

#### *Hong Kong Seafood Import Regulations*

Hong Kong has been a Special Administrative region of the People's Republic of China since 1997, and is governed under the "one country, two systems" principle that allows for a high degree of autonomy.<sup>clxv</sup> All of Hong Kong's food safety and import laws, for example, are completely independent from Mainland China's regulatory system.

All food and beverage products (with the exception of spirits), including seafood, can be imported to Hong Kong duty free. Domestic Hong Kong importers are required to hold import permits issued by the government, and foreign exporters must supply their Hong Kong agents/importers with all necessary documents.<sup>clxvi</sup>

Hong Kong's Center for Food Safety, which operates under the Hong Kong Food and Environmental Hygiene Department (FEHD) is responsible for implementing food safety control policies. A new food law, the Food Safety Ordinance (Cap. 612) was enacted in 2011 and came into full operation in February 2012.<sup>clxvii</sup> The Hong Kong government once intended to make the provision of health certificates issued by the country of origin mandatory for seafood imports, but has since tabled the initiative.<sup>clxviii</sup> While not a requirement, an accompanying health certificate with seafood imports is recommended in order to facilitate customs clearance. When a shipment of seafood products arrives in Hong Kong, it may be still be subject to inspection and sampling by Hong Kong's Center for Food Safety before release.<sup>clxix</sup>

In contrast to Mainland China, currently both Mexico and the US have not established recognized seafood safety certification schemes with Hong Kong.<sup>clxx clxxi</sup>

## 5 THE FUTURE OF MEXICO'S SEAFOOD IN THE CHINESE MARKETPLACE

Parts A and B explored historic changes and present trends in Chinese seafood demand and Mexican seafood supply, respectively. This final section explores the ongoing interactions between Chinese demand and Mexican fisheries, including the major market, regulatory and environmental trends that are shaping the Mexico-China luxury seafood trade. This section builds on information presented earlier and projects how these trends may play out in the future.

### 5.1 Major Trends Impacting Chinese Seafood Demand and Mexico-China Seafood Trade

- *Demand for luxury seafood products in Mainland China took a sharp dive immediately following the implementation of the Chinese government's Frugality Campaign in 2012. However, luxury seafood demand is on the rebound as spending on luxury seafood is shifting from the government to private consumers and restaurants are shifting menus towards relatively lower priced luxury seafood dishes to accommodate a wider customer base.*
- *Several high-profile food contamination scandals have undermined Chinese consumer confidence in the safety of the domestic food supply. Oversight of Mainland China's food safety system is shared by more than 10 government agencies, and there are clear examples of reactionary, disproportionate food safety policy that makes regulatory moves difficult to predict.*
- *A lack of trust in domestic food production, coupled with the cachet of eating imported goods, has led Chinese seafood consumers to distinguish between imported and domestic seafood. Branding imported products with their country of origin presents a good market opportunity for Mexico in China.*
- *China's entry into the WTO in 2011 harkened a new era of trade liberalization, international cooperation, and transparency. However, a FTA between Mexico and China in the near future does not appear likely. Nonetheless, the Chinese government and Chinese companies have consistently expressed interest and taken steps toward economically integrating with Latin America as a whole, as well as with Mexico, by signing agreements to support economic cooperation and also investing in Latin American production and processing.*
- *The relative fluctuations of the Mexican Peso (MXN) and the Chinese Yuan (CNY) impact both China's ability to purchase seafood from Mexico and Mexican seafood exporters' competitiveness on the global market. The behavior of the US Dollar (USD) also impacts the Mexico-China seafood trade, as many seafood deals are denominated in dollars. It is reasonable to expect that over the next five years, the CYN will appreciate modestly against the MXN, increasing the purchasing power of Chinese seafood importers.*

#### **a) The Chinese Frugality Campaign and its impact on luxury seafood demand**

In November 2012, when Xi Jinping assumed the office of the General Secretary of the Central Committee of the Communist Party of China, he announced a bold campaign to "to promote frugality, oppose extravagance and enhance the anti-corruption efforts among party and governmental authorities." This was an apparent response to the reports that government officials were spending upwards of \$50 billion a year on lavish banquets.<sup>clxxii</sup> Since then, the Communist Party of China (CPC) has adopted formal written regulations on frugality that contain 12 chapters outlining the proper management of public funds, including official travel, receptions, meetings, official vehicles and buildings.<sup>clxxiii</sup> Of particular interest for this report are the regulations that prohibit holding banquets with public money, drinking during weekday lunches, having extravagant weddings for officials' children, hosting lavish funerals, purchasing expensive liquor, placing flower arrangements in meeting rooms and giving luxurious gifts during festivals. The law goes one to explicitly forbid the purchase of certain delicacies during official meals, including shark fin and birds' nest soups.

There is strong evidence that the Frugality Campaign has led to a decline in banquet spending<sup>41</sup>, seafood restaurant and catering revenues and luxury seafood gift-giving. Sales of luxury seafood items like shark fin, sea cucumber, abalone and groupers, which were staples of celebratory banquets have been hard hit as lavish official banquets dwindled.<sup>clxxxiv</sup> Growth in China's high-end restaurant and catering sector has reversed because of a sharp decrease in state demand. According to a survey by the China Cuisine Association, upscale restaurants in western China suffered an 80% decline in revenue.<sup>clxxxv</sup><sup>42</sup> Official Chinese data showed the annual sales growth of the catering sector slowed sharply to 8.5% in the first quarter of 2013 (from 13.6% in the whole of 2012), and sales for large caterers dipped 2.6% in the first quarter of 2013, compared to a 12.9% rise in 2012.<sup>clxxxvi</sup> Even harder hit were the Beijing's high-end caterers, which the Chinese Ministry of Commerce says have experienced a 35% drop in business since the start of the campaign.<sup>clxxxvii</sup> Specifically, some specialty shark fin restaurants in Beijing have changed their menus or closed down and many airlines and hotel chains have stopped serving the soup.<sup>clxxxviii</sup>

The waning popularity of lavish banquets appears to have impacted the prices of luxury seafood products as well. Since the implementation of the frugality regulations, the price of shark fins has fallen by 20-30% in Hong Kong, Macau and other major seafood markets,<sup>clxxxix</sup> while the prices of abalone and sea cucumber have plummeted by as much as 50%.<sup>clxxx</sup><sup>clxxxii</sup> Demand for blue grouper, another favorite of luxury banquets, has also fallen steeply since the campaign.<sup>clxxxii</sup>

Dried seafood vendors in Mainland China and Hong Kong were also affected.<sup>43</sup> Gift boxes containing sea cucumber and other dried luxury seafood goods for example, which cost hundreds of dollars each, gathered dust on retailers' shelves.<sup>clxxxiii</sup> According to shopkeeper Leung Wing-chiu on Hong Kong's "Dried Seafood Street" (the center of trade in dried luxuries), sales declined 20% at a time when increased ethical awareness over shark fin and rising rents were already putting pressure on dried seafood.<sup>clxxxiv</sup>

"Demand from mainland buyers, especially hotels and restaurants, has shrunk a lot. This is particularly true for high-end goods such as dried abalone, shark fins and bird's nest."  
*Leung Wing-chiu, President: Dried Sea Food & Grocery Merchants Association, Hong Kong*

According to Yeung Wai-sing, the chairman of the Association of Hong Kong Catering Services Management Ltd, "For years, this traditional business has been fuelled by orders from mainlanders, who consider dried seafood from Hong Kong to be premium in quality." Wong Hiu-wan, a vendor selling birds' nests, adds, "Now, we have to count more on local consumers, because orders from mainland hotels and restaurants have gone down dramatically."<sup>clxxxv</sup>

Despite the decline in official state spending on luxury seafood, and the plunge in demand immediately following the implementation of the campaign, the overall outlook for luxury seafood demand in China remains promising. As reported by one industry news outlet, "The reason why so many [importers] have piled in — and are staying in the market — [is that] prices for seafood imports in general in China remain strong, despite even the effects of a government anti-corruption campaign touted in other reports."<sup>clxxxvi</sup> As presented in Section A, increasing numbers of Chinese consumers continue to make such luxury seafood purchases as their incomes steadily rise. Indeed, the Frugality Campaign has raised optimism of increased private consumption over the longer term, which could put China on a more sustainable economic footing.<sup>clxxxvii</sup> In addition to reducing Chinese total government spending (which was reported in 2013 to account for about 15% of GDP), the Frugality Campaign may be generating more private spending in luxury seafood.<sup>clxxxviii</sup>

<sup>41</sup> However, several news outlets reported that some officials are continuing their lavish lifestyles simply by moving luxurious feasts underground. Parties that were once hosted in gilded restaurants may now be catered clandestinely in suburban villas and behind simple doorways. (Source: <http://online.wsj.com/news/articles/SB10001424052702304027204579334162357059046>)

<sup>42</sup> Xiangeqing, China's first privately owned restaurant group to go public, posted a net loss of 68.4 million yuan (\$11 million) in the first quarter, in contrast to a 46.2 million yuan profit in the same period last year (*Reuters*, May 2013). A five-star hotel in Beijing also lost roughly \$1.6 million in canceled reservations (*Time*, May 2013).

<sup>43</sup> Curiously, Hong Kong seafood vendors interviewed for this project mentioned that, the Frugality Campaign has had little to no impact on their business.

Additionally, in response to the decline in revenues from government dining, many high-end restaurants are now offering dishes that appeal to private Chinese consumers. Beijing Banquet, a high-end restaurant in Beijing, used to generate roughly 90% of its revenue from meals paid with public funds; as of January 2014 that proportion dropped to zero.<sup>cxix</sup> In order to stay afloat, Beijing Banquet and other high-end restaurants have redesigned their menus to expand their customer base beyond government officials: more Chinese consumers are able to dine at these restaurants now because most dishes are priced around 40-50 yuan [\$6.50-\$8], or a maximum 200 yuan [\$32], whereas Beijing Banquet used to charge over 1000 yuan [\$160] for a single course.<sup>cx</sup> Beijing Banquet is not alone, as the founder of Xiangeqing, China's first publicly-owned restaurant group, has also announced that his company will shift from high-end catering to the mass market.<sup>cxci</sup>

While the Frugality Campaign is likely to continue through 2014 and perhaps beyond,<sup>44</sup> the decline in government consumption will likely enable growth in luxury seafood demand from private consumers as restaurants and dried seafood outlets shift their businesses toward a broader range of Chinese consumers.

### **b) Food safety crises and seafood demand in China**

In the last decade, food safety crises in China have played an important role in shaping both Chinese consumption habits and Chinese food safety regulations. Exporters interested in tapping into the lucrative Chinese market must be nimble enough to navigate rapidly changing regulations and savvy enough to address the preferences of Chinese consumers increasingly concerned with food safety and quality.

#### *Recent History of Food Safety Scandals in China:*

Over the past 10 years there have been a relatively large number of well-publicized food safety scandals originating in China. Prominent examples include melamine<sup>45</sup> in infant formula, skimmed milk, wheat gluten, rice protein products, animal feed and pet food; unsafe veterinary residues in farm-raised fish and shrimp; toxic dye in duck feed, chili sauce and other foods; the use of industrial bleach to whiten noodles; and pork contaminated with banned growth promoting steroids.<sup>cxii cxiii</sup> As a result, Chinese food items have been periodically rejected in the US, Europe, Japan and other countries in recent years.<sup>cxiv</sup> Chinese shipments of fish and shellfish are among the types of imports that the US Food and Drug Administration (FDA)'s most commonly turns away, highlighting recurring problems with "filth," unsafe additives, mislabeling (typically introduced in food processing and handling) and veterinary drug residues in fish and shellfish which can be introduced at the farm.<sup>cxv</sup> Similarly, the European Union's Rapid Alert System for Food and Feed (RASFF) has detected food safety problems related to traces of unsafe levels of veterinary drugs or other illegal additives in Chinese fishery products.<sup>cxvi</sup>

The causes of such food safety crises in China include the historically weak enforcement of food safety standards, the rapid industrialization of China's agriculture and food industry (which has outpaced the development of a food safety control system), the heavy use of agricultural chemicals (including pesticides, veterinary medicines, and processing additives), industry looking to cut input costs, corruption of local officials and considerable environmental pollution.<sup>cxvii, cxviii cxix</sup>

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<sup>44</sup> President Xi Jinping recently reinforced his call for "honor to frugality and shame to extravagance," and government authorities ramped up enforcement, firing and detentions of bureaucrats. (Source: Wall Street Journal, "New Frugality Puts Strain on Chinese Firms", January 22<sup>nd</sup> 2014. Available at: <http://online.wsj.com/news/articles/SB10001424052702304027204579334162357059046>)

<sup>45</sup> Melamine is an industrial chemical that when added to raw milk raises the apparent protein content. It has been linked to the development of bladder and kidney stones and kidney failure. (<http://www.who.int/csr/media/faq/QAmelamine/en/>).

### *Chinese Consumer Preferences:*

Chinese consumers are increasingly concerned with the quality of the food they are ingesting and some have lost faith in the domestic food industry as well as the government's ability to design and implement effective food safety controls and keep the population safe from harmful chemicals in the food supply.<sup>ccccicci</sup>

According to a survey conducted by the Perishables Group at the 2010 Asian Seafood Exposition in Hong Kong, food safety ranked closely behind freshness as the top concern of seafood consumers. Not surprisingly, responses varied by region, with close to half of all Hong Kong respondents citing food safety/cleanliness as the most important factor when choosing which seafood items to purchase, in comparison to just over one-quarter of all Southern Mainland Chinese respondents.<sup>cciii</sup>

Seafood traceability is also of growing importance to Chinese consumers, as it provides a level of transparency to the supply chain, giving consumer confidence that their food will be safe.<sup>cciv</sup> The general trend away from local wet markets and small food stores toward supermarkets may also be influenced by food scares because supermarkets are perceived as cleaner and safer.<sup>ccv</sup> Chinese consumer mistrust of food safety in their own country has given rise to a preference for imported seafood products, which Chinese consumers consider a safer alternative to seafood produced in China.<sup>ccvi</sup> This preference is due in part to consumer trust in US and European products as high quality, as well as the general perception that seafood imports originate in cleaner waters. Consumers appear willing to pay a premium for that perceived safety.<sup>ccvii</sup>

### *Chinese National Food Safety System:*

Chinese officials have historically been more concerned with meeting the caloric needs of a growing population base than overseeing the quality of that food supply. As a result, food safety has only become a government priority in recent years.<sup>ccviii</sup>

In 2001, the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) was established as the government agency responsible for overseeing safety and quality conditions of Chinese food imports and exports. The AQSIQ operates through a series of provincial services and the China Entry-Exit Inspection and Quarantine Bureaus (CIQs). There are 19 departments under AQSIQ, and food safety issues fall under the jurisdiction of Department of Supervision on Animal and Plant Quarantine, the Bureau of Import and Export Food Safety, and the Department of Supervision of Food Production.<sup>ccix</sup>

However, the AQSIQ is only one of about ten government departments and ministries that are responsible for monitoring food safety in China.<sup>ccx</sup> Because no single agency in China is responsible for all food safety regulations and enforcement, the departments' duties often overlap.<sup>ccxi</sup> While the National People's Congress established the State Food and Drug Administration in 2003 in order to coordinate food safety regulation and unify the systems, fraudulent practices and weak food safety controls remain a major concern.<sup>ccxii</sup>

In June 2009, a new food safety law took effect aimed at addressing many of the above mentioned issues by establishing national food standards, setting up a food safety commission, requiring food manufacturers to keep extensive records and holding producers accountable for food safety violations. However, the new law's effectiveness will depend on how it is implemented and enforced, and while the general level of food safety controls in China seems to be improving, it is difficult to assess the degree of progress because information is closely guarded by the government.<sup>ccxiii</sup> For example, the Ministry of Agriculture's testing of vegetables, meats, and fish in domestic markets for pesticide and drug residues in 2007 reported impressive compliance rates ranging from 91-100% but because few details about the testing are made public the results are difficult to evaluate.<sup>ccxiv</sup>

The Chinese government appears concerned with Chinese consumers' waning confidence, and at times may implement seemingly rash domestic food safety or international trade measures in order to demonstrate the government's capacity to respond to public health risk.<sup>ccxv ccxvi</sup> For example, China's bans against several US exports

on food safety grounds illustrates the type of active trade policy shifts that Mexico will likely have to grapple with in the future. In 2013 China banned imports of all pork produced using ractopamine, a feed additive given to hogs to improve the leanness of their meat as well as the efficiency of their development. China (as well as the European Union and Russia) went forward with the ban despite the Codex Alimentarius Commission's (an international food safety body) approval of ractopamine as safe for human consumption in 2012.<sup>ccxvii</sup> As a result Smithfield Foods, the largest pork producer in the US, experienced a 63% plunge in net income during the second quarter of 2013.<sup>ccxviii</sup> Interestingly, the major Chinese pork producer Shuanghui International purchased Smithfield Foods in May 2013, and Smithfield is in the process of converting half of its hog production to be ractopamine-free. According to Businessweek, "China's push to boost pork supplies for a growing middle class—*while improving its food safety and consumer perceptions*—is a key part of the deal, which is expected to increase US pork exports to China, the world's largest pork market." [emphasis added]<sup>ccxix</sup> Within the seafood industry, China recently blocked imports of all US geoduck after arsenic was found in a few samples. See the Feature, "Chinese Ban on US Geoduck" for a complete description of the story.

#### *Responding to Regulatory Risk:*

Of particular relevance to seafood exports, the China Entry-Exit Inspection and Quarantine Bureau (CIQ) is notoriously unpredictable, and has recently implemented stricter requirements for imports.<sup>46</sup> According to Chris Hanselman, head of Hong Kong-based Pacific Rich Resources which imports Greenland halibut, brown crab, Canadian yellow tail flounder and Icelandic cod and plaice for the Mainland China market, "The unpredictability of CIQ and customs regimes...makes China challenging...You can get very badly burned on mortalities which will eat away your margins and into any previous profits very quickly."<sup>ccxx</sup>

In order to mitigate this regulatory risk, some seafood importers have sought to line up their businesses with Chinese government priorities to the greatest extent possible. For example, Pacific Rich Resources decided to sell only sustainable seafood in China, and in Hanselman's words, "We have now linked this in with health and safety. So this gels with the new initiatives from CIQ to tighten up on this. To me this is all positive...We always source from either accredited sources or purchase from accredited factories. We always do our own third party checks on the chain of custody to ensure that the products meet the criteria. This is very important to us."<sup>ccxxi</sup>

Seafood exporters therefore may increasingly receive pressure from not only Chinese regulators but also foreign importers to supply products that are certified to demonstrate high food safety, product quality and traceability.

#### **CHINESE BAN ON US GEODUCK**

On December 3, 2013, Chinese seafood inspectors suspended imports of all bivalves originating in West Coast waters, citing high levels of arsenic and paralytic shellfish poisoning (PSP) in samples of imported geoduck. The geoduck shipment was linked back to waters in Ketchikan, Alaska and the Puget Sound, Washington.<sup>ccxxii</sup>

In a public letter addressed to the US National Oceanic and Atmospheric Administration (NOAA) and the Department of Commerce (DOC), Chinese authorities stated that laboratory tests revealed the geoduck originating from Alaska exceeded China's PSP standard by a factor of 8. The letter did not detail test results for arsenic, but openly criticized lack of arsenic monitoring by US government agencies. Chinese officials made around 20 requests for information from the US, which included the need for further details on seafood safety standards and testing procedures,<sup>ccxxiii</sup> including an audit of Northwest shellfish testing procedures, before China could consider lifting the import ban.<sup>ccxxiv</sup>

<sup>46</sup> The new strictness of the CIQ has also led to an increase in shipments, particularly of high value live products, through grey channels. (Source: "Tightening of inspection, margins for China importers", SeafoodSource, October 21<sup>st</sup>, 2013: <http://www.seafoodsource.com/en/news/supply-trade/24642-tightening-of-inspection-margins-for-china-importers#sthash.1L6T8mFb.NayerAmU.dpuf>)

The Washington State Department of Health tested samples of geoduck from across the state and concluded that arsenic levels on all of the edible parts of the geoduck were within safe ranges, below Chinese standards. However, elevated levels of arsenic were found in the skin of the clams, which are typically discarded.<sup>CCXXV</sup> In a surprising response, Chinese officials retorted that, “Chinese consumers eat the geoduck meat and skin and sometimes the digestive gland, too.”<sup>CCXXIII</sup>

Shortly after the announcement of the ban, media outlets in the US predicted that the ban would greatly impact Washington, as 90% of its geoduck exports are destined for the Chinese market. Around five to seven million pounds of geoduck are harvested by the state annually and the companies generally sell the clam for \$7-\$25 a pound.<sup>CCXXVI</sup> Despite predicted monetary losses totaling more than \$1 million<sup>CCXXVII</sup>, a news story in February reported that importers based in Hong Kong and Vietnam continue to purchase Washington State geoduck. In January, 409 shipments were destined for Hong Kong, 243 to Vietnam and 70 to Malaysia, Thailand and Indonesia.<sup>CCXXVIII</sup>

Given China’s history of using trade bans to achieve political ends, it is not clear if the bilvalve ban is just about arsenic levels. One observer points out that the timing of the ban occurred during a WTO ministerial meeting in Indonesia.<sup>CCXXIX</sup> Speculations around upset distributors in British Columbia swaying authorities to incite a ban circulated as well. Distributors in BC used to market Washington and Alaskan geoduck, but a few years ago Washington set up direct market channels to Hong Kong and Mainland China. Whether they have that much influence on the markets has yet to be revealed in media outlets.<sup>CCXXX</sup>

The recent ban may also shed light on growing food safety concerns in China, fueled in part by the concerns of Chinese consumers. Little is known as to how Chinese consumer perception of west coast shellfish, in particular geoduck, has been impacted by recent events. News headlines in China and Hong Kong have displayed images of skull and crossbones associated with the product. As branding and origin become increasingly important to the Chinese consumer, it is difficult to predict consumer response to geoduck from the region in the future.

#### Geoduck Ban Newspaper Headlines



Source: Chinese Print Media

Recent events may serve as an opportunity for other geoduck harvesting regions such as Mexico to gain or increase access to the Chinese market. It should also serve as a lesson on the consequences of becoming overly reliant on Chinese demand. Efforts to export to a more diverse market have the potential to reduce the impacts of unpredictable events such as this one.

### c) National branding and consumer perceptions in China

Chinese consumers' lack of confidence in their domestic food safety system, could present opportunities for imported seafood, which may be perceived as coming from clean waters and more scrupulous food safety regimes.<sup>CCXXX</sup> This section explores the market potential for branding imported products with their country of origin, i.e. "national branding."

#### *Recognition of Country of Origin:*

Hong Kong seafood businesses interviewed by CapLog stated that their consumers generally lacked awareness of and interest in the country of origin, citing instead the importance of freshness and price. The notable exceptions were those where the country of origin has become tied to branding and perceptions of quality. Japanese sea cucumber, South African abalone and US and Canadian geoduck all benefitted from an origin-based cachet. According to a USDA report, other luxury seafood products with strong regional branding in China include French oysters, New Zealand rock lobster and scallops, Australian mussels and abalone, Maine lobster and US Dungeness, king and snow crab.<sup>CCXXXI</sup>

While average Chinese consumers do not appear to be making buying decisions for most seafood based on national branding, there is evidence that wholesalers often price seafood based on country of origin.<sup>CCXXXII</sup> <sup>CCXXXIII</sup>

The success of those products described above has inspired the seafood industry in several countries, such as Canada, New Zealand and Norway, to develop a coordinated export strategy in China by "coming together under one flag to increase market share."<sup>CCXXXIV</sup> As evidenced by these examples, industries, nations or regions that have coordinated marketing initiatives have been most successful in building a recognized brand amidst a market characterized by stiff competition and little product differentiation.<sup>CCXXXV</sup>

The New Zealand Trade and Enterprise (NZTE), a seafood industry group, recently launched a promotional campaign on China's popular Tmall.com retail website. China is New Zealand's largest seafood market, highlighting New Zealand shellfish, including their emerging geoduck aquaculture sector. As part of the campaign, during one week in April Chinese shoppers were able to purchase live seafood from New Zealand and have it packaged and airfreighted to Shanghai within 36 hours; within 72 hours the seafood orders were in the hands of the Chinese consumers. In the words of Mike Arand, the NZTE Shanghai trade commissioner, "This channel gives New Zealand companies access to efficient and scalable ways to expand sales in China, so we are very excited to have our first New Zealand promotion with Tmall.com."<sup>CCXXXVI</sup>

#### **New Zealand China Seafood Campaign**



Source: <http://miao.tmall.com/go/market/miao/xhxxl.php>

While Mexico is generally not known as a provider of high quality seafood in China, Mexican abalone has succeeded in establishing a name for itself in China. South China Sea Farm Limited's (a Chinese company) promotion of a "California Mexico" abalone brand that markets the abalone as "very rare and expensive."

### Calmex Brand Mexican Abalone



Source: <http://i.imgur.com/5cSYn0H.jpg>

### Luxury Abalone Advertisement from South China Sea Farm



Source: <http://southchina-seafarm.com/>

Canada, New Zealand and Norway have all had success in marketing their high-value seafood in China.<sup>ccxxxvii</sup> Notably, Norwegian salmon is coveted by Chinese consumers, even over wild Alaskan sockeye, which is typically regarded as a higher value product in western countries.<sup>ccxxxviii, ccxxxix</sup> See the Feature, "Branding in the Face of the Chinese Ban on Norwegian Salmon" for a complete description of the story.

In sum, while country of origin is not the first thing Chinese consumers look for when selecting their seafood, Chinese seafood importers, vendors and restaurant owners clearly distinguishes between different nations'

seafood. Furthermore, the success of Canadian, New Zealander and Norwegian branding campaigns provides a potential pathway for the Mexican luxury seafood industry.

### **BRANDING IN THE FACE OF THE CHINESE BAN ON NORWEGIAN SALMON**

In 2010, China demonstrated that it is willing to use its trade policy as a political tool. After a Norwegian Committee awarded the Nobel Peace Prize to Chinese dissident Liu Xiaobo, China retaliated by placing strict import controls on Norwegian Salmon. China's imports of Salmon from Norway represented 92% of its salmon imports in 2010. Norway had become confident in its market share and export capabilities, forecasting a sales increase of up to 40% in 2011. The forecasting was grounded in the growing Chinese middle class' love of Japanese-style raw fish.<sup>ccxi</sup> Unfortunately sales projections did not take into account China's act of political retribution. Norway's market share of Chinese salmon imports plummeted to 29% in the first half of 2013.<sup>ccxli</sup>

The strict import controls have revealed new trade channels. Industry executives claim Chinese consumers still have unwavering preference for Norwegian salmon, perhaps because they are mostly unaware of their government's clash with Norway.<sup>ccxlii</sup> Norwegian officials state there are ways to avoid the ban with salmon first exported to countries such as Scotland or Vietnam before reaching China.<sup>ccxlii</sup> If this claim holds to be true, Scottish environmentalists warn their nation is being used as a "back door" to ship thousands of tons of farmed salmon to China.<sup>ccxlii</sup> Scottish exports of farmed salmon to China have increased by 6,000% since 2010. The catch? Around 66% of Scottish farmed salmon is owned by Norwegian-owned companies.<sup>ccxlii</sup> Marine Harvest, a Norwegian salmon farm company was able to switch to exporting Scottish salmon with no issues.<sup>ccxi</sup> Due to the environmental impacts of salmon farming, a Scottish environmental campaigner has recently written to the Chinese consulate in Edinburgh to persuade officials to ban Scottish salmon imports, after all it is technically "Norwegian."<sup>ccxliii</sup>

In April of 2011, in what appears to be a publicity stunt on behalf of Norway, Jackie Chan endorsed Norwegian salmon at the opening of Nobu Restaurant, a popular Japanese style restaurant in Beijing. The event was attended by the Norwegian Ambassador and the Director of the Norwegian Seafood Export Council. Jackie Chan provided the following statement: "Norway provides an abundance of good salmon. It is without radiation, so there is no need for anyone to worry. Thank you Norway for providing all these good products and a special thanks to the Norwegian Ambassador for joining us."<sup>ccxliv</sup>

#### **Jackie Chan Promoting Norwegian Salmon**



Source: Norwegian Seafood Export Council

#### d) The future of Mexican-Chinese seafood trade regulations and channels

Understanding seafood trade relations between China and Mexico cannot be separated from understanding how the two trading partners manage two key issues: food safety and illegal trade. With the trade of seafood products, a fine balance must be struck between compulsory measures that protect public health and the liberalizing and streamlining of export and import procedures. When trade barriers in the form of import requirements or duties are set too high, grey channels proliferate that threaten economic security and also undermine food safety inspection.

The below section summarized current food safety and illegal trade issues that may impact Mexico-China seafood trade in the near future.

China's entry into the WTO in 2011 may indicate that the CCP is interested in pursuing an increasingly liberal trade policy. As of 2014 China had signed FTAs with 11 nations and was negotiating with four more.<sup>ccxiv</sup> That said, a FTA between Mexico and China in the near future does not appear likely. According to Mexican Foreign Minister Jose Antonio Mead, "I think at this stage it is too early to talk about a free-trade agreement...I think we are still at a stage at which we are becoming aware of opportunities, opening a space for business dialogue, so it does not seem to be the instrument or path which best serves us."<sup>ccxlv</sup> To date, China has not given any clear indication of its intentions to join the Trans-Pacific Partnership, of which Mexico is a party. Analysis suggests that the requirements set forth within the TPP may be too restricting for China at this time.<sup>ccxlvii</sup>

Regardless of China's status as a signatory to the TPP, Chinese businesses (state-owned and otherwise) have been building partnerships in Mexico. For example, in 2012, Mexico and China signed an agreement on fisheries and agriculture that recognizes the importance of the two sectors in terms of food, employment, income and foreign exchange earnings. The agreement establishes a joint obligation to promote and develop research that will strengthen knowledge of the biological status of fishery resources, and it was signed in hopes that information and technology exchange would help to facilitate and strengthen bilateral trade.<sup>ccxlviii</sup> Specifically, the agreement is expected to normalize the live lobster and canned abalone trade, as well as streamline the live goduck trade between the two countries.<sup>ccxlix</sup>

Most recently, in June 2013 the Primer Foro de Ministros de Agricultura China-América Latina y el Caribe was held in Beijing. China's Minister of Agriculture Han Changfu<sup>47</sup> expressed enthusiasm for the potential for increased bilateral trade, citing China's concern with food security given the need to feed a rising population.<sup>cc</sup> A sizeable delegation from Mexico comprised of SAGARPA and Mexican industry representatives traveled to Beijing in order to promote the export of Mexican goods (namely, pork and tequila).<sup>ccli</sup> In all, 22 ministers signed the 'Beijing Declaration,' an agreement to cooperate in the areas of science, technology, economy and trade within the agricultural sector.<sup>cclii</sup> During the meetings, the Chinese Vice-Minister of Agriculture and Fisheries Niu Dun, expressed the desire to invest \$40 million in Latin America in 2015 and the Chinese Development Bank highlighted the possibility of providing \$10 million worth in special credits to support the construction of infrastructure.<sup>ccliii</sup> While not specifically directed toward Mexico, commitments such as these illustrate the opportunity Mexico has to attract and utilize Chinese capital to improve the marine capture and aquaculture production and processing of products ultimately destined for the Chinese market. For example, see the Feature "Investing in Mexican Luxury Seafood Aquaculture."

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<sup>47</sup> Back in 2010 Chinese Minister of Agriculture, Han Changfu stated, "the time is ripe for the country's agricultural companies to embark on a go outward strategy," and special funds were created by the Ministry of Commerce that same year to fund overseas investment in agriculture, forestry and fisheries. (<http://english.caixin.com/2014-01-08/100626498.html>)

## INVESTING IN MEXICAN LUXURY SEAFOOD AQUACULTURE

Over the past fifteen years, Mexican industry and government have invested heavily in the country's aquaculture sector. In recent years, Mexico has established itself as a regional leader in shrimp and tilapia farming, and recent inroads in shellfish seeding and tuna ranching have also yielded returns for Mexican businesses.<sup>ccliv</sup> In 2014, the Peña Nieto administration reaffirmed its commitment to aquaculture, stating that the industry has "significant relevance" in the continued development of Mexican rural development.<sup>cclv</sup>

High prices for Chinese culinary luxuries have spurred investments in aquaculture for luxury species in Mexico. Private investors with the backing of academia and/or the Mexican government have begun projects aimed at farming geoduck, softshell crab, totoaba<sup>48</sup> and curvina in captivity, with an eye on the Chinese market.

In 2012 China and Mexico entered into a cooperation agreement that would provide Mexico with Chinese technical and scientific support in developing a Mexican aquaculture sector for high value delicacies, such as sea cucumber and jellyfish.<sup>cclvi</sup> These bilateral efforts illustrate that both Mexico and China see the value of their growing seafood trade and are willing to work together to professionalize the industry.

While China seems likely to increase economic cooperation across many sectors including seafood, Mexican seafood export firms wishing to enter the Chinese market face the risks of the unpredictable implementation of import and food safety regulations. In addition to strengthening communication between Chinese and Mexican trade and food safety authorities, building strong relationships between Mexican exporters and Chinese importers can mitigate regulatory risk. Mexican exporters, with increased knowledge from their Chinese partners (as well as the relevant regulatory bodies), can better anticipate and respond to regulatory priorities.

Competition for entry into the Chinese market from other Latin American seafood exporting countries will also likely remain fierce. While Mexico leads Latin America's non-fishmeal seafood exports to China, countries like Chile, Peru and Ecuador are also playing increasingly important roles as seafood suppliers to China.<sup>cclvii</sup> For example, Chile recently signed a FTA with China, which provides its salmon exports with a preferential 3% import tax, compared with 10% paid by Norwegian salmon exporters.<sup>cclviii</sup>

The use of Hong Kong as a trade channel into Mainland China will likely remain a very important component of Mexico-China seafood trade. Barring a Mexico-China FTA, because of Hong Kong's beneficial duty-free import regulations, advanced trade infrastructure, the use of English and currency stability, the island will likely continue to serve as a gateway for Mexican seafood products seeking entry into China.

### e) The impact of currency on the Mexico-China seafood trade

Foreign exchange presents serious risks to any export-based business. The relative fluctuations of the Mexican Peso (MXN) and the Chinese Yuan (CNY) will impact both China's ability to purchase seafood from Mexico and Mexican seafood exporters' competitiveness on the global market. The behavior of the US Dollar (USD) also impacts the Mexico-China seafood trade, as many seafood deals are denominated in dollars.<sup>49</sup> The below table

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<sup>48</sup> The Unidad de Biotecnología en Piscicultura, Facultad de Ciencias Marinas, (Biotechnology in Fish Studies Unit at the Marine Science School) of the Universidad Autónoma de Baja California's Campus in Ensenada currently has aquaculture operations for totoaba

<sup>49</sup> Many Mexican seafood exporters quoted prices in USD. As global seafood is largely a dollar-denominated trade, the exchange rates between countries matter less than the individual participants' access to US Dollars and each individual country's exchange rate vis-a-vis the United States.

presents the potential impacts of different foreign exchange scenarios on Chinese seafood demand and Mexico's export competitiveness. It also explores several plausible events<sup>50</sup> that could trigger major moves in the relative value of these three currencies.

**Table 11: The Impact of Foreign Exchange Scenarios on Chinese Seafood Demand and Mexico's Export Competitiveness**

Scenario	Impact on Mexico's Seafood Exports to China	Factors that Could Trigger this Scenario
CNY appreciates vis-à-vis the MXN, <i>ceteris paribus</i>	Chinese importers have greater purchasing power in Mexico; Chinese ability to purchase Mexican seafood would increase.	<p>A recent IMF analysis estimates that the China's exchange rate is currently undervalued by 5-10%<sup>cclix</sup>, at least partially due to currency interventions.</p> <p>In November 2013 the head of the People's Bank of China (PBOC) announced that it will "basically end normal intervention in the currency markets."<sup>cclix</sup> This is firstly in response to US government accusations of currency manipulation, but also as a natural consequence of a general strengthening and maturation of the Chinese economy. Many offshore observers believe the Chinese government wants CNY to become a global reserve currency in the future, much like the Euro, the US Dollar, and the Japanese Yen. For this to happen, the Chinese must remove restrictions on cross-border financial flows, and make the CNY a fully convertible currency. While some analysts believe that full convertibility is possible within the next 5-10 years, it is highly unlikely to occur in the short- to medium-term.</p> <p>Although China has been an economic powerhouse for many years, government-imposed restrictions on financial and trade flows have barred foreign access to many investment opportunities. If China successfully relaxes these restrictions, and, if its economy continues to grow at a steady pace, then it is likely that significant foreign investment will flow into the country. By the laws of supply and demand, with increased demand for CNY-denominated assets will come a more expensive (and higher valued) CNY. In other words, greater foreign direct investment into an open Chinese economy should lead to an appreciation of the currency.</p>
CNY depreciates vis-à-vis the MXN, <i>ceteris paribus</i>	Chinese importers have less purchasing power in Mexico, making it more expensive to import Mexican seafood.	The rate of Chinese economic growth has slowed by more than 35% over the past 4 years. In March 2010, China reported its annual GDP at 11.9%; by 2014, the same metric stood at 7.7%, with further risks to the downside. If this trend continues, the Chinese government could decide to embark on a program of quantitative easing or to intervene directly in the currency markets to reduce the strength of the CNY to facilitate a more profitable environment for domestic exporters.

<sup>50</sup> Chinese economic data (released by the Chinese government and PBOC, the Chinese Central Bank) is notoriously unreliable. Although capital markets rely on government numbers for 3rd party analysis, there is a great deal of distrust of the Chinese government in general. Some prominent analysts believe that the publically available numbers are completely doctored, and that Chinese growth is actually slowing down more rapidly than the government is willing to let on.

		<p>Some evidence suggests that this might already be underway. In the spring of 2014 the Chinese government intervened multiple times in the currency markets, selling large amounts of CNY in exchange for USD. Many analysts speculate that this is a deliberate attempt to deflate the value of the CNY.</p> <p>There is also speculation that PBOC has used exchange rates as a policy instrument, depreciating the CNY to show disfavor with policy decisions of its major trading partners. For example, historical price data suggests that the PBOC may have manipulated exchange rates ahead of important international summits to gain political leverage.</p>
<p>MXN depreciates vis-a-vis the currencies of other seafood exporters, but not vis-à-vis the CNY</p>	<p>Mexico's seafood exports become more competitive globally; China imports more Mexican seafood at the expense of its other trading partners.</p>	<p>Any destabilizing event within Mexico could hurt the MXN. For example, a surge in narco violence, retraction of some free market policies and heightened global economic risks (especially another downturn in the US economy) could all exert downward pressure the MXN.</p> <p>While analysts generally regard Mexico as a success story of emerging market economic growth and credible policymaking, its currency still tends to rise and fall in line with the other emerging market currencies. For example, when investors become worried about global growth prospects, they generally reduce their "riskier" investments first, including those in emerging markets. While Mexico may be considered stable as compared to a country like Egypt, neither are a match for US government bonds during times of crisis or panic. A global growth downturn, large-scale war, or another financial crisis in Europe could cause emerging market currencies such as MXN to lose appeal, as investors reduce risk and exit developing country investments.</p> <p>Another potential trigger of a depreciation of the MXN is an increase in US interest rates. Mexico is a beneficiary of the "carry trade" when interest rates are higher in Mexico than in other countries. For example, the Mexican Central Bank's benchmark interest rate is currently 3.5% (the comparable benchmark rate in the US is targeted between 0-0.25%).<sup>51</sup> In a traditional carry trade, investors will borrow money in a low yielding currency (such as USD), and invest it in a higher yielding one (such as MXN). Ignoring inflation effects, MXN should have more attractive returns than the USD in this scenario. However, if the US Federal Reserve decides to increase interest rates in the US as the US Fed Funds rate moves closer to the Bank of Mexico (Banxico) overnight rate, all else equal, the value of investing in MXN is comparably less. As investors remove their money from Mexico and invest it back into the US, the outflow of investment</p>

<sup>51</sup> Normally, emerging market bond yields are higher than those of developed countries. This is to compensate the debt holders for increased risk. As the US Fed reduces its quantitative easing, eventually interest rates will increase. All else being equal, the carry trade will become less profitable, and money will move emerging market economies (like Mexico), back into the US. This could contribute to a decline in the MXN.

		<p>in the MXN should reduce its value vis-à-vis the USD and other, higher yielding, currencies.</p> <p>If the Mexican Central Bank decided to embark on a program of quantitative easing, much like the US has been doing over the past several years, MXN could potentially depreciate. This is unlikely, considering the Mexican economy is improving, and quantitative easing is a policy generally reserved to combat serious economic crises only.</p>
<p><b>Summary: Based on the PBOC's recent statement on ending currency intervention and the International Monetary Fund's estimate of an undervalued CYN, it is reasonable to expect that over the next five years, the CYN will appreciate modestly against the MXN, increasing the purchasing power of Chinese seafood importers.</b></p>		

## 5.2 Impact of Major Trends on Mexico's Luxury Seafood Fisheries

- *Eighty three percent of Mexican fisheries are currently overexploited or have reached their maximum sustainable yield. Among the luxury focus species, only geoduck, sea cucumber and swimming crab have potential for increased capture and development. However, assessments of ecological status of these species may not be accounting for increased vulnerability due to illegal activities.*
- *High prices for the luxury focus species make them vulnerable to illegal fishing and illegal trade, placing significant pressure on the stock and its surrounding ecosystem. The value of illegal luxury seafood confiscated over the last two years in Mexico (likely a small percentage of the real amount) totaled over \$26 million, representing 86% of the total value of legal luxury seafood exports from Mexico to Hong Kong in 2013.*
- *Authorities must implement management decisions that not only address declining stock, but also increase oversight of illegal trade channels. Government limits on legal fishing as well as crackdowns on illegal fishing of the luxury focus species may shift Chinese demand to alternative luxury products (i.e. sourcing swim bladder from bagre bandera), but these actions could also continue to increase prices and illegal trade if gray markets are not addressed in tandem with environmental controls.*
- *Coupled with a crackdown on illegal fishing and trade, public and private investment that increases the production and processing capacity and therefore the quality of the Mexican luxury focus species products would likely generate higher and more stable prices from the Chinese market.*

### a) **Current sustainability status of Mexico's luxury fisheries**

Over 80% of Mexican fisheries are currently overexploited or have reached their maximum sustainable yield,<sup>ccixi</sup> including the majority of the luxury species selected for this report. Only geoduck and sea cucumber and Gulf of Mexico swimming crab have potential for increased capture and development.

While high seafood prices often incentivize illegal fishing behavior, there are also examples of high prices for luxury seafood being reinvested in the responsible management of Mexico's fisheries. FEDECOOP, a federation of fishing cooperatives located on the Pacific Coast of Baja California, has succeeded in developing and policing a robust rights-based management system for their lobster and abalone stocks, thanks in part to the high prices that their harvest receives in markets like China. In April 2004 FEDECOOP obtained Marine Stewardship Council certification, the first of its kind in Mexico.

The below table presents elements that measure the vulnerability of each luxury focus species. A combination of factors such as high market price, biological status and environmental rating were used to draw attention towards species that have become, or may become vulnerable to overexploitation based on growing Chinese demand. The ecological status reports released by INAPESCA and the seafood ratings of the Monterey Bay Aquarium's Seafood

Watch program provide insight into the current status of each of these luxury species. That said, programs like Seafood Watch are largely focused on tapping into Western consumers’ environmental awareness and typically do not prioritize some of the more exotic seafood products like sea cucumbers featured on Chinese menus.

**Table 12: Current Hong Kong Import Price, Biological Status and Monterey Bay Aquarium Seafood Watch Rating of Luxury Focus Species**

SPECIES	2012 HONG KONG IMPORT PRICE OF MEXICAN PRODUCT (2012 USD/KG)	BIOLOGICAL STATUS (CARTA NACIONAL PESQUERA)	MONTEREY BAY AQUARIUM SEAFOOD WATCH RATING
Geoduck‡ ( <i>Panopea generosa</i> )	\$10.06	Potential for Development	N/A
Sea Cucumber‡ (Multiple Species)	\$45.09	Potential for Development to Maximum Sustainable Yield (Depending on Species)	N/A
Shark (Multiple Species)	\$71.18	Maximum Sustainable Yield	Worldwide: Avoid (Wild Caught Blacktip, Rock Cod, Sandbar)
Swim Bladder*‡ (Multiple Species)	\$52.22	Maximum Sustainable Yield	Gulf of California: Avoid (Wild Caught Curvina)
Crab (Genus: <i>Callinectes</i> )	\$30.97	Gulf of California: Maximum Sustainable Yield Remaining States: Potential for Development	Gulf of Mexico: Best Choice (Wild Caught Stone Crab)
Octopus (Genus: <i>Octopus</i> )	\$5.40	Maximum Sustainable Yield	Gulf of California: Good Alternative (Wild Caught)
Jellyfish~ ( <i>Stomolophus meleagris</i> )	\$1.84	TBD	N/A
Seahorse‡ (Genus: <i>Hippocampus</i> )	\$259.08	N/A	N/A
Lobster (Genus: <i>Panulirus</i> )	\$29.94	Maximum Sustainable Yield	Gulf of Mexico: Best Choice (Diver Caught Caribbean Spiny) Mexican Pacific and Gulf of California: Best Choice (Trapped California Spiny)
Abalone (Genus: <i>Haliotis</i> )	\$50.20	Deterioating	Worldwide: Best Choice (Contained Production of Green, Pink & Red Abalone)

**Notes:**

‡ The sea cucumbers (*Parastichopus parvimensis* and *Apostichopus parvimensis*) and seahorse (*Hippocampus erectus*) are currently listed as vulnerable species on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. The sea cucumber (*Isostichopus fuscus*) is listed as endangered while totoaba (*Totoaba macdonaldi*) is listed as critically endangered.

‡ This price is listed for ‘Clams, cockles and ark shells’. Geoduck does not have its own product specification and is grouped into this larger category.

\* This price is listed for ‘Fish Heads, Tails and Maws’. Swim bladder does not have its own product specification and is grouped into this larger category.

~ According to the Carta Nacional Pesquera, due to significant variations in lifecycle, further biological investigation is required to determine status. Jellyfish price is the Hong Kong average import price from all countries, not Mexico specific.

**b) b. Illegal activity and Mexico’s luxury species**

Illegal activity is common in the fishing industry and seafood trade worldwide. According to 2013 Pew study,<sup>cclxii</sup> the global economy loses as much as \$23.5 billion annually as the result of illegal and unregulated fishing; Mexico is no exception. A recent study conducted by a consortium of Mexican environmental groups estimated up to 60% of all Mexican seafood landings are illegal.<sup>cclxiii</sup>

Insufficient resources allocated to inspection and enforcement, widespread corruption and economic necessity all are important drivers of illegal fishing.<sup>cclxiv</sup> Given the high prices that luxury seafood can fetch on the Chinese market, most of these species are vulnerable to illegal capture and transport, which places significant pressure on the stock and its surrounding ecosystem.

On the production side, illegal activity takes the form of fishing out of season, or in restricted areas, using unauthorized gear types or without the appropriate permits or documentation. Across the supply chain, unscrupulous actors find ways to move seafood product without proper permits into lucrative markets while avoiding costly import tariffs. On the demand side, seafood mislabeling is rampant, even among high-end restaurants and markets in wealthy countries, with some species being mislabeled between 25-70% of the time.<sup>cclxv</sup>

“The thing about sea cucumber is that the more threatened species, the more valuable it becomes. It's a vicious circle.”  
- Bernardo Ortiz von Halle  
([www.traffic.org](http://www.traffic.org))

As demand for a given species or product increases, so do incentives for illegal fishing activities; it is not surprising that the astronomical prices for some luxury seafood goods have spurred illegal fishing and smuggling in Mexico. While estimating the value of illegal luxury seafood trade between Mexico and China is impossible, a cursory sampling of seafood smuggling busts over the last two years provides a snapshot of the scale of the market. Over \$26 million worth of totoaba swim bladder, sea cucumber, shark fin, geoduck and seahorse were confiscated by Mexican authorities from 2012-2014 (Table 13). To put this into perspective, the estimated value of Mexico's legal luxury seafood exports of shark fin, sea cucumber, clams (including geoduck), and swim bladder to Hong Kong was \$30.1 million in 2013.

#### Illegal Swim Bladder Busts in Mexico



Source: Associated Press; US Department of Justice

Illegal capture and trade creates a vicious cycle that in turn promotes further illicit activities. For example, according to one fisherman in Sinaloa, a legal fisherman will capture around 6kg of shrimp in a day, while an illegal fisherman will fish by night and net up to 12kg of shrimp.<sup>cclxvi</sup> The legal fisherman will in turn lose potential income due to the reduced quantity of the resource and higher cost of production. As the resource becomes depleted, authorities will then implement management measures to reduce fishing efforts and protect stock. As many fishermen do not have other employment alternatives, they too turn to illegal capture to maintain income. With this in mind, authorities must determine how to implement management decisions that not only address declining stock but also increase oversight of trade channels through which illegal product is traveling. Recent news stories suggest that authorities have become increasingly aware of trade channels and are investing in new technology and processes to address this important issue.<sup>cclxvii</sup>

**Table 13: High Profile News Stories of Illegal Luxury Focus Species Trade  
(2012-2014)**

Date	Location	Species	Quantity	Estimated Retail Value* (USD)
March 2012	La Paz, Baja California Sur	Geoduck	1,555 Geoduck	\$17,623
February-April 2013	Mexicali, Baja California	Totoaba Swim Bladder	500 Swim Bladders	\$5-9 million
March 2013	Calexico, California	Totoaba Swim Bladder	270 Swim Bladders	\$3-\$5 million
March 2013	Calexico, California	Totoaba Swim Bladder	170 Swim Bladders	\$1-\$2 million
May 2013	Ensenada, Baja California	Sea Cucumber; Seahorse; Totoaba Swim Bladder [smuggled in legal shipment of shark fin and jellyfish]	898,660 Sea Cucumbers; 78,676 Seahorse; 1,000 boxes of Swim Bladder	Total value estimated to be in the millions; the seahorse alone had a value of \$2 million
October 2013	Ensenada, Baja California	Great White Shark Fin	24 Shark Fins	Up to \$700/KG
November 2013	Campeche, Campeche	Sea Cucumber	2,000 KG	\$3 million
February 2014	Cancun, Quintana Roo	Sea Cucumber	5,374 KG	\$8 million
March 2014	Mexicali, Baja California	Totoaba Swim Bladder	8 KG	\$80,000-\$144,000
March 2014	Progreso, Yucatán	Sea Cucumber	800 KG	\$1 million

Sources: Listed under reference cclxvi

\*Estimated retail value based off values reported in news articles

**c) Risks and opportunities posed by China’s luxury seafood demand in Mexico**

In the following table, the most salient risks and opportunities presented to Mexican luxury seafood fisheries are explored, as well as factors that could mitigate changes in supply, demand and prices.

**Table 14: The Impact of Key Events and Trends on Chinese Demand for Mexican Luxury Seafood Products and their Mitigating Factors**

LUXURY FOCUS SPECIES	TREND OR EVENT	IMPACT	MITIGATING FACTORS
Shark Fin	The Chinese government instituted a ban on banquets paid for with public funds, and specifically the purchase of shark fin soup in 2012. <sup>cclxviii</sup>	<ul style="list-style-type: none"> <li>Decrease in government spending on shark fin soup at banquets.</li> <li>Shark fin prices have shown signs of decline in recent years.</li> </ul>	If the government lifts the ban on public banquets, demand for shark fin could rise again.
	In response to a global campaign to end shark finning, several prominent international hospitality groups and organizations have removed shark fins from their menus. <sup>cclxix</sup> <sup>cclxx</sup>	<ul style="list-style-type: none"> <li>Concerned consumers, particularly in higher educated and younger demographics, demand less shark fin.</li> <li>Shark fin prices have shown signs of decline in recent years.</li> </ul>	Older and less cosmopolitan demographics do not appear to be impacted by environmental campaigns.
	Bans on shark fishing may reduce the supply of legally caught sharks in Mexico. Sharks	<ul style="list-style-type: none"> <li>Shark fishing bans will likely decrease the supply of Mexican shark fins.</li> </ul>	Increase in supply of illegally caught sharks and proliferation of the illegal

	may not be fished between May-August each year, <sup>52</sup> and as of January 2014 the capture of white sharks has been permanently banned in Mexico's waters. <sup>53</sup>	<ul style="list-style-type: none"> <li>• Mexico's shark fins are such a small portion of the global supply that a reduction in Mexico's shark supply is unlikely to have much of an impact on price of shark fins in China.</li> </ul>	fin trade in Mexico.
	Under pressure from environmental groups, 65 countries around the world have banned shark finning while an additional 22 have shark finning regulations in place. <sup>ccclxxi</sup>	<ul style="list-style-type: none"> <li>• If enough of the global supply of sharks declines due to fishing bans, it is likely that the price for shark fins in China will surge.</li> </ul>	If successful, continued environmental campaigns targeting consumers succeed in creating a social stigma surrounding shark fin soup, curbing global demand.
	Despite relatively stable capture volumes (legally reported), a decline in Mexican shark population due to by-catch, overfishing or illegal capture is a very real possibility.	<ul style="list-style-type: none"> <li>• Decrease in Mexican supply of shark fins.</li> <li>• Mexico's shark fins are such a small portion of the global supply that a reduction in Mexico's shark supply is unlikely to have much of an impact on price of shark fins in China.</li> </ul>	If shark populations do collapse, this may trigger renewed efforts from environmental groups to legislate shark fin off the menu.
<p><b>Summary: Despite a moderate decline in Chinese demand due to the government's Frugality Campaign and consumer campaigns by environmental groups, it is reasonable to expect the demand for shark fin will remain relatively constant because of its central importance to Chinese banquet culture.</b></p>			
<b>Geoduck</b>	China may continue the ban on imports of US geoduck in response to reported concentrations of arsenic and heavy metals.	<ul style="list-style-type: none"> <li>• Chinese importers and consumers do not differentiate between Mexican and US geoduck. Demand for Mexican geoduck declines.</li> <li>• Prices decrease.</li> </ul>	If Mexico is able to effectively differentiate its product from US and Canadian geoduck, it may be able to capitalize on the ban of its competitor, US

<sup>52</sup> Since 2007, the practice of shark finning while at sea has been prohibited; shark fins are not permitted to be landed unless the bodies are on board the vessel. The ban on shark fishing from May-August was passed in 2011. Source: [http://www.hsi.org/assets/pdfs/shark\\_finning\\_regs\\_2014.pdf](http://www.hsi.org/assets/pdfs/shark_finning_regs_2014.pdf)

<sup>53</sup> SEGOB. "Acuerdo por el que Establece Vede Permanente para la Pesca de Tiburón Blanco (Carcharodon carcharias) en Aguas de Jurisdicción Federal de los Estados Unidos Mexicanos." [http://www.dof.gob.mx/nota\\_detalle.php?codigo=5330831&fecha=27/01/2014](http://www.dof.gob.mx/nota_detalle.php?codigo=5330831&fecha=27/01/2014). January 2014.

			geoduck.
	The Mexican government has provided grants and loans to the emerging geoduck industry. The government will likely continue to support the development of the geoduck industry. <sup>54</sup>	<ul style="list-style-type: none"> <li>• Increase in demand thanks to marketing efforts.</li> <li>• Increase in quality, due to improved facilities.</li> <li>• Increase in prices, due to more demand and better quality.</li> </ul>	If geoduck sales and prices continue to drop off, the Mexican government may no longer see the industry as a priority sector for investment.
	Without careful management, overexploitation of geoduck fields could lead to population collapse.	<ul style="list-style-type: none"> <li>• Decrease in supply, due to stock collapse.</li> <li>• Overall decline in Mexican geoduck industry leading to decline in quality and therefore prices for Mexican geoduck.</li> <li>• Ban of wild geoduck harvests.</li> </ul>	Increased enforcement of existing geoduck laws, <sup>55</sup> better science and geoduck aquaculture could ensure that the stocks remain healthy.
	Mexican geoduck aquaculture production rises, increasing production and potentially quality. For example, a laboratory project in Puerto Peñasco, where geoduck seed is being cultivated and sold is currently underway; expected annual sales are \$2.5 million. <sup>cclxxii</sup>	<ul style="list-style-type: none"> <li>• Increase in supply of Mexican geoduck.</li> <li>• Evidence from the American Pacific Northwest shows that farm-raised geoduck can fetch better prices than its wild counterparts, as it is more uniform in color, size and consistency.</li> </ul>	Geoduck aquaculture in Mexico's warm waters remains untested and significant investments remain to even see if geoduck farming is viable in Mexico.
	Several countries around the world are working to develop geoduck aquaculture operations. Projects in New Zealand and China are currently underway. <sup>cclxxiii</sup>	<ul style="list-style-type: none"> <li>• As new production comes online, the global geoduck supply will increase.</li> <li>• The price for geoduck will likely decrease in response to new sources of the clam.</li> </ul>	If the global geoduck industry is successful in building a demand for the giant clam, prices could remain stable.
	<b>Summary: Mexico's geoduck industry has opportunities related to the Chinese market. Illegal harvest and poor handling have placed Mexico's geoduck in a position inferior to their US and Canadian counterparts. Increased investment in Mexican geoduck production and marketing could change this position.</b>		
<b>Bladder</b>	Consumers concerned over global shark populations seek swim bladder as a more ethical alternative. <sup>cclxxiv</sup> With its gelatinous texture, swim bladder could be a textural alternative. <sup>cclxxv</sup>	<ul style="list-style-type: none"> <li>• Prices for swim bladder surge on the back of increased demand.</li> </ul>	As demand increases, it is likely that Chinese importers will identify new sources of swim bladder.
	Chinese traders may continue to increase their purchases of swim bladder from non-traditional	<ul style="list-style-type: none"> <li>• New sources of swim bladder keep prices stable.</li> <li>• Mexican bagre bandera and</li> </ul>	It is unclear whether swim bladder from non-traditional croaker species

<sup>54</sup> INAPESCA began promoting development of biotechnology for cultivation and reproduction of geoduck in 2011. <http://www.sagarpa.gob.mx/saladeprensa/boletines2/paginas/2011B700.aspx>

<sup>55</sup> For example, in February 2013 the Congreso de Baja California approved an amendment to Article 420 in the Código Penal Federal to penalize poaching of sea urchin and geoduck

	species such as the catfish bagre bandera. <sup>56</sup>	other ‘swim bladder species’ see a spike in revenues, from a fishery by-product.	will attract consumer demand.
	New conservation campaigns may target consumption of swim bladder, particularly the rare species of totoaba and bahaba.	<ul style="list-style-type: none"> <li>• Demand for swim bladder decreases.</li> <li>• Prices for swim bladder decline.</li> <li>• Demand for a new alternative to swim bladder and shark fin increases.</li> </ul>	Neither swim bladders, nor the organisms from which they are typically sourced are particularly ‘charismatic.’ Compared with shark fin, elephant tusks, rhino horns and other successful conservation campaigns, croaker swim bladder may not lend itself to strong emotional response in consumers.
	Mexican, Mainland Chinese or Hong Kong government crackdown on illegal swim bladder smuggling. <sup>57</sup>	<ul style="list-style-type: none"> <li>• Supply of illegal swim bladder falls.</li> <li>• Swim bladder prices increase in response to supply constraint.</li> <li>• The legal swim bladder trade thrives.</li> </ul>	Powerful organized crime syndicates on both sides of the Pacific protect black market channels.
	Several Mexican seafood processors have discussed investing in technology to add value to their swim bladders. <sup>58</sup>	<ul style="list-style-type: none"> <li>• If Mexico is able to professionalize its swim bladder industry, product quality and, therefore, prices would likely increase.</li> </ul>	If Mexican firms do not fully understand subtleties in consumer preference for swim bladder, they may not be able to capture price premiums from their investments in swim bladder processing.
<b>Summary: Mexico’s swim bladder could generate more value from the Chinese market through investments such as harvesting the swim bladder from non-traditional species such as bagre bandera and others and enhancing swim bladder processing capacities.</b>			
<b>Sea Cucumber</b>	Heightened demand and illegal capture could lead to the overexploitation of sea cucumber, resulting in population collapse.	<ul style="list-style-type: none"> <li>• Sea cucumber supplies dwindle</li> <li>• Prices surge, putting even more pressure on the fragile resource.</li> </ul>	New sources of cultivated sea cucumber come online, decreasing pressure on wild populations.
	Mexico improves enforcement of sea cucumber fishing and trade bans. For example, in November 2013, CONAPESCA and the Armada de Mexico conducted surveillance in the Yucatán coast. <sup>cclxxvi</sup>	<ul style="list-style-type: none"> <li>• Illegal sea cucumber supply declines</li> <li>• Sea cucumber prices increase in response to supply constraint.</li> </ul>	Powerful organized crime syndicates on both sides of the Pacific, protect their black market channels.
	Protesting fishermen convince	<ul style="list-style-type: none"> <li>• Legal harvests of sea cucumber</li> </ul>	Given the fragile status of

<sup>56</sup> An interview conducted by CapLog with a vendor at Nueva Viga Fish Market reveals that Chinese buyers are increasingly substituting swim bladder for shark fin. Purchases of swim bladder are not exclusive to traditional varieties either, catfish bladder sales have increased.

<sup>57</sup> See the report section, “How significant a role does illegal activity play in the Mexico-China seafood trade?”

<sup>58</sup> Interviews conducted by CapLog with Hong Kong swim bladder vendors reveal that processing to Chinese standards, often done by Chinese employees in Mexico, is a very important step in the value addition process.

	the Mexican government to increase their sea cucumber harvesting privileges. <sup>59</sup>	<p>in Mexico increase.</p> <ul style="list-style-type: none"> <li>• The industry formalizes, potentially leading to an increase in quality and investments in regional branding for Mexico.</li> <li>• Prices for Mexican sea cucumber increase.</li> </ul>	the wild sea cucumber population in Mexico, it is unlikely that the government will give into public pressure from the fishing community.
	Several investors have begun to develop sea cucumber aquaculture operations in Mexico. In 2014, a joint venture between Sinaloa and China plans to “plant” hundreds of hectares of sea cucumber along the coast of Yucatán, using a process referred to as “mariculture.” <sup>cclxxvii</sup>	<ul style="list-style-type: none"> <li>• Increase in supply of Mexican sea cucumber.</li> <li>• Sea cucumber quality may rise, leading to increase in price.</li> </ul>	Potential virus outbreaks in the nascent Mexican sea cucumber farming industry could diminish the cultivated supply, putting additional pressure on the wild resource.
	Significant advances in the artificial propagation of cucumber have been made and the cultivation of sea cucumber becomes increasingly popular, particularly in Asia. <sup>cclxxviii</sup>	<ul style="list-style-type: none"> <li>• As new production comes online, the global sea cucumber supply will increase.</li> <li>• The price for sea cucumber will likely decrease in response to new found sources of the product.</li> </ul>	As cultivated sea cucumber become the norm, a premium market for wild sea cucumber may develop, putting increased pressure on the natural resource.
<p><b>Summary: Chinese demand for Mexican sea cucumber is not likely to abate in the near future. The development of sea cucumber aquaculture operations in Mexico and around the world may take some pressure off of the wild resource. The illegal sea cucumber trade will likely continue to threaten Mexico’s wild sea cucumber stocks.</b></p>			
Jellyfish	A lack of a firm understanding of biological and environmental causes of jellyfish blooms creates uncertainty for the fishery. <sup>cclxxix</sup>	<ul style="list-style-type: none"> <li>• Supply highly variable, as well as prices.</li> <li>• Recent investments in jellyfish processing along the Sonoran coast, may not provide their investors a good return if supply is not consistently available.</li> </ul>	Increased science on jellyfish populations will reduce risk of overexploitation.
	The introduction of a management regime for this fishery could limit access to supply. <sup>60</sup> There are now more users in the fishery and the season is shorter (spanning only 4-5 weeks) as opposed to	<ul style="list-style-type: none"> <li>• Decrease in supply of jellyfish to market.</li> <li>• Increase in prices.</li> </ul>	Even with limits set on jellyfish fishing, there may be no effect on supply due to elevated illegal fishing activity.

<sup>59</sup> In February 2014, 200 fisherman in Isla Arena came together at the Palacio Municipal de Calkani to demand permits for sea cucumber. <http://tribunacampeche.com/campeche/2014/02/18/pescar-pepino-de-mar-es-exigencia/>

<sup>60</sup> Sources close to the Mexican government report that new rules governing jellyfish harvest may be released in 2014.

	March-July in the past. <sup>cclxxx</sup>		
	The Mexican government may consider investments in jellyfish cultivation. <sup>61</sup>	<ul style="list-style-type: none"> <li>• Increase in supply of farm-raised jellyfish, as well as quality and consistency of supply.</li> <li>• Prices for Mexican jellyfish may increase.</li> </ul>	If global jellyfish prices decline (or those in China), the Mexican government may no longer see the industry as a priority sector for investment.
	<b>Summary: There is a lot of uncertainty surrounding the future of the jellyfish trade in Mexico. As long as there is a wild supply, however, Chinese traders will likely continue to pay top dollar for Mexican jellyfish.</b>		
<b>Seahorse</b>	Mexican, Mainland Chinese or Hong Kong government crackdown on illegal seahorse smuggling. <sup>cclxxxii cclxxxiii</sup>	<ul style="list-style-type: none"> <li>• Illegal seahorse supply declines.</li> <li>• Seahorse prices increase in response to supply constraint.</li> </ul>	Powerful organized crime syndicates on both sides of the Pacific, protect their black market channels.
	If Mexico establishes itself as a reliable source for seahorse, more Chinese buyers will be seeking the threatened species in Mexico.	<ul style="list-style-type: none"> <li>• Demand for Mexican seahorse rises in China.</li> <li>• Supply of seahorse declines as the species is overexploited.</li> <li>• Seahorse prices surge.</li> </ul>	Increased government efforts to crackdown on the illegal seahorse trade.
	<b>Summary: Due to high demand and staggering prices the illegal seahorse trade will likely continue to grow, threatening Mexico's wild seahorse populations.</b>		

<sup>61</sup> "Mariculture" characterized by cultivation at sea, within enclosures, is an area of focus within the agreement signed by Mexico and China for the development and cooperation in Fisheries and Aquaculture. <http://yucatan.com.mx/mexico/firman-mexico-y-china-acuerdo-de-cooperacion-pesquera-y-acuicola>

## 6 CONCLUSION

Chinese demand for luxury seafood products presents great opportunities as well as serious risks to Mexican businesses and many of Mexico's marine resources. This report focused on Chinese demand for luxury seafood products (in terms of changes in consumption patterns and preferences, imports and prices in diverse luxury seafood outlets), as well as explore the effects of that demand on Mexico's fisheries to-date and moving forward.

Through exploring the rich and complicated Mexico-China luxury seafood trade, CapLog has developed the following conclusions and recommendations:

- Mexican businesses commercializing the luxury focus species benefit from the trade, but face a power imbalance. While the Chinese market is the largest demand driver for these species in Mexico, Mexico supplies only a small amount of China's overall luxury seafood imports. This imbalance has led to extreme price and demand swings, and creates insecurity for Mexican fishermen and exporters. Mexico must be very strategic about branding itself to Chinese buyers, in order to demonstrate value of Mexican product over competitors, as well as being a *unique source* worldwide of luxury seafood products.
- There is a significant market opportunity for Mexico to brand its products as high quality, safe and coming from pristine waters. As evidenced by the success of other products such as Japanese sea cucumber and US or Canadian geoduck, Chinese consumers are amenable to country-of-origin marketing. In order to capitalize fully on this opportunity however, key investments are needed to continue to improve Mexican luxury seafood processing, supply chain traceability, and food safety and quality certifications.
- Significant business opportunities through direct trade between Mexico and China could also be captured by further investment in Mexican processing, storage and transportation capacity. The Mexican seafood industry can capture more value by building its own port and air infrastructure and therefore becoming less reliant on US trade infrastructure.
- Informal and illegal seafood trade represents significant lost value and a huge lost opportunity to Mexico. Formalizing the seafood trade and cracking down on illegal harvest and trade stabilizes prices and business contracts and protects overexploited and threatened Mexican fisheries. Government limits on legal fishing as well as crackdowns on illegal fishing may shift Chinese demand to alternative luxury products (i.e. sourcing swim bladder from *bagre bandera*). However, these actions could also continue to increase prices and illegal trade if gray markets are not addressed in tandem with environmental controls.
- Lastly, additional investment in public-private information sharing systems is needed to support data-driven management decisions. There are clear information gaps that are hurting Mexico's export businesses. Without better access to trade statistics, consumer trend data, information about shifts in trade policies and independent biological research on species of interest, seafood exporters may not be able to transform the boom and bust cycles associated with Chinese demand into long term, stable trade relationships.

## 7 METHODOLOGY

CapLog's analysis relies on diverse sources of information, from official trade statistics, to interviews with exporters and retailers. Specifically, the following types of data were analyzed:

- Macroeconomic data regarding the Mexico-China seafood trade;
- Microeconomic data regarding prices in the Chinese, and specifically Hong Kong, seafood market; and
- Qualitative data regarding Mexican export practices, Chinese consumption trends, and Mexican and Chinese government policies relevant to the international seafood trade.

CapLog also identified several 'luxury focus species' of particular relevance to Mexico-China luxury seafood trade for more in-depth analysis. While this report includes a "macro view" of China's seafood trade, the selection of the luxury focus species guided CapLog's analysis of the microeconomic and qualitative data mentioned above.

Except where explicitly described otherwise, data presented for "China" includes both Mainland China as well as Hong Kong. All monetary amounts are in real 2012 US Dollars (USD), except where otherwise labeled.

A description of the approach behind the selection and analysis of the information contained within this report follows:

### A. Scope

#### 1. Summary Information about Overall Seafood Production, Consumption and Foreign Trade

CapLog's analysis of the Mexico-China seafood trade begins with a "macro view" of Mexican production, Chinese consumption, and Mexico-China seafood trade across all species. Where available, both volume and value data are analyzed in order to illustrate major trends. Often Mexico-China trade data is also compared with the seafood trade in other countries in order to contextualize the emerging economic relationship between Mexico and China within global seafood trade patterns.

#### 2. More Detailed Assessment of Focus Species

In addition to a "macro view" of the Mexico-China seafood trade, CapLog examined several primary 'luxury focus species' in more depth: swim bladder, shark fin, geoduck and sea cucumber. These luxury focus species products were selected based upon several criteria: (1) Popularity and price in China; (2) Production growth in Mexico; (3) Mexico-Chinese trade trends; and (4) Vulnerability of the resource in Mexico. In addition, CapLog presents information on several other species of interest to the Mexico-China luxury seafood trade, when data is available, including crab, octopus, sea urchin, jellyfish, croakers, seahorse, abalone and lobster.

### B. Data Sources

#### 1. Macroeconomic Data

This report relies heavily on several major governmental and intra-governmental databases for information about national and global seafood production, consumption and trade. For all of the analyses, CapLog sought the most current data available. The availability of quality data for each year varied widely between data sources. Of particular utility were the following databases:

- Comisión Nacional de Acuicultura y Pesca (CONAPESCA): <http://www.conapesca.sagarpa.gob.mx>

- Food and Trade Organization's (FAO) Fisheries and Aquaculture Department: <http://www.fao.org/fishery/statistics/global-production/en>
- FAOSTAT Gateway: <http://faostat3.fao.org/faostat-gateway/go/to/home/E>
- Hong Kong Customs and Statistics Department: <http://www.customs.gov.hk/en/statistics/index.html>
- OECD-FAO Agricultural Outlook <http://www.oecd.org/site/oecd-faoagriculturaloutlook/>
- United Nations Commodity Trade Statistics Database: <http://comtrade.un.org/db/>
- USDA Economic Research Service: [www.ers.usda.gov](http://www.ers.usda.gov)
- World Trade Organization Statistics Database: <http://stat.wto.org/Home/WSDBHome.aspx>

## **2. Mexican Exporter Interviews**

CapLog conducted interviews with the owners or managers of 12 Mexican firms that currently export seafood to China. The firms deal in a broad range of seafood products, from fishmeal to live geoduck and are located across Mexico in the states of Sinaloa, Sonora, Baja California and the Yucatan. In addition to capturing information regarding the company's current seafood exports by species, prices and destination, the interviews captured the exporters' perspectives on the following: (1) When and how their current seafood exports to China and/or Hong Kong were established; (2) The effect of changing Chinese demand on their business; (3) Whether they have experienced changes in Mexican seafood supply; and (4) Mexican government policies and practices regarding Mexico-China seafood trade. A copy of the complete interview tool can be found in Appendix D.

## **3. Hong Kong Market and Restaurant Site Visits and Interviews**

CapLog used government and non-governmental organizations' databases and reports to analyze Chinese seafood demand. To supplement the official data, CapLog conducted informal interviews and observed luxury seafood offerings at 53 different seafood outlets in Hong Kong to gather recent information about prices, product types and changing consumption habits. The Hong Kong on-site data collection provided a snapshot of current prices, product types, popular presentations, and consumption anecdotes for the luxury focus species. This exploration provides insight into current trends at wholesale markets, neighborhood markets, and restaurants in Hong Kong but not a statistically significant 'survey' of Hong Kong markets or restaurants. Copies of the complete interview tools can be found in Appendix D.

Hong Kong was selected as the site for this data collection because it is a major seafood-trading hub in China, has a level of socio-economic development that supports high consumption of luxury seafood products (as well as a culture of diverse cuisines), and is currently a common destination for Mexican seafood exports. Hong Kong is a major channel for Chinese seafood trade for the following reasons: (1) Its geography (i.e., its proximity to Southeast Asia and Australia, as well as other Pacific Ocean trading partners in the Americas); (2) Its highly developed trade infrastructure; and (3) Its beneficial tax structure (i.e., Hong Kong places zero tariffs on seafood imports).

CapLog's Hong Kong associate captured and analyzed the market and restaurant data. Through more than 20 different interviews and site visits at wet wholesale markets, wet neighborhood markets, dried seafood outlets and supermarkets, the Hong Kong associate documented both prices and presentations of the luxury focus species and opinions of vendors and customers.

The Hong Kong associate also visited more than 30 restaurants in Hong Kong and captured both the prices and presentations of luxury focus species on the menus and the perspectives of restaurant owners and managers about changing consumption patterns. The restaurants included in the study had a variety of cost-points, from cheap fast food to formal banquet dining, and also a variety of seafood cuisines (e.g. Chinese, Japanese, and mixed Chinese-Western cuisine). The majority of restaurants surveyed were Chinese-Cantonese because the luxury focus species are most commonly found in this cuisine.

**Table 15: Summary of Hong Kong Data Collection**

TYPE OF SEAFOOD OUTLET	NUMBER OF INTERVIEWS OR SITE VISITS, BY GEOGRAPHY			
	HONG KONG ISLAND	KOWLOON	NEW TERRITORIES	TOTAL
Wet wholesale market	1	3	0	4
Wet neighborhood market (1-3 stalls visited within each market)	0	2	4	6
Supermarket	0	7	0	7
Dried seafood outlet	4	3	4	11
Restaurant (interview and menu information)	7	6	13	26
Restaurant (only menu information collected)	1	3	2	6
<i>Total number of interviews or site visits</i>				<b>53</b>

\*Includes both interviews and menu observations

**Table 16: Summary of Hong Kong Data Collection**

TYPE OF RESTAURANT	NUMBER OF SURVEYS COMPLETED <sup>+</sup> , BY TYPE OF CUISINE		
	CANTONESE	MIXED CUISINE*	TOTAL
Family-Owned	3	--	3
Corporate-Owned/Chain	22	1	23
Hotel Restaurant	3	--	3
Hotel Wedding Banquet (including 1 Exclusive Club Wedding Banquet)	--	3	3
<i>Total number of restaurants assessed</i>			<b>32</b>

<sup>+</sup>Includes both interviews and menu observations

\*Mixed cuisine (Cantonese and Western) or Japanese

8 APPENDICES

Appendix A: Changes to the International and Hong Kong Harmonization Systems (HS) Used to Classify Luxury Focus Species

Table A: Changes to the International Harmonization System Used to Classify Luxury Focus Species Products (2002-2012)

UN COMTRADE HS CODES			
Product	2002	2007	2012
Swim Bladder		N/A	030572: Fish heads, tails and maws 030579: Fish fins, heads, tails, maws and other edible fish offal, other
Shark Fin		N/A	030571: Shark Fins, dried, salted or in brine, whether or not cooked before or during the smoking process
Swimming Crab			030614: Crabs, frozen 030624: Crabs, not frozen
Octopus			030751: Octopus, live, fresh or chilled 030759: Octopus, other than live, fresh, chilled
Geoduck			030771: Clams, cockles and ark shells (Arcidae, Arctiidae, Cardiidae, Donacidae, Hiatellidae*, Mactridae, etc) live fresh or chilled 030779: Clams cockles and ark shells, other
Sea Urchin	030791: Molluscs & Invertebrates, live, fresh or chilled 030799: Molluscs & Invertebrates frozen/ dried/ salted/ in brine, other		030821: Sea Urchins (Strongylocentrotus spp., Paracentrotus lividus, Loxechinus albus, Echinus esculentus) live, fresh or chilled 030829: Sea Urchins (Strongylocentrotus spp., Paracentrotus lividus, Loxechinus albus, Echinus esculentus) other
Sea Cucumber			030811: Sea Cucumber live, fresh or chilled 030819: Sea Cucumbers, other
Jellyfish			030830: Jellyfish (Rhopilema spp.)
Croakers	030269: Fish, n.e.s., fresh/chilled 030379: Fish, n.e.s., frozen 030569: Fish other than herrings, cod & anchovies, salted (but not dried/smoked)/in brine, other		030289: Other fish, excluding livers and roes 030389: Other fish, frozen, excluding fillets 030569: Fish, salted but not dried or smoked and fish in brine, other than edible fish offal, other

Source: Elaborated by using UN COMTRADE 2002, 2007, 2012 Code Availability

Crab	slightly different HS codes	030624.31 Chinese mitten crabs, live 030624.39 Crabs, freshwater, live 030624.41 Swimming Crabs, Live 030624.49 Crabs, marine, other than swimming, live
Octopus	Same product categories but slightly different HS codes	030751.90 Octopus live, fresh or chilled 030759.10 Octopus frozen, including smoked 030759.90 Octopus, dried, salted or in brine
Geoduck	030791.93 Clams, live fresh or chilled	*030771.90 Cockles and ark shells, live *8030779.10 Clams cockles, ark shells, frozen *030779.90 Clams, cockles, ark shells, dried
Sea Urchin	030799.40 Molluscs and Aquatic Invertebrates, nesoi, frozen 030799.90 Molluscs and Aquatic Invertebrates, nesoi, dried, salted or in brine	030821.90 Sea Urchins, Live 030829.10 Sea Urchins, frozen 030829.90 Sea Urchins, dried, salted or in brine
Sea Cucumber		030830.20 Jellyfish, Live 030830.30 Jellyfish, frozen 030830.90 Jellyfish, dried
Jellyfish	030799.30 Beche de Mer, dried, salted or in brine	030811.90 Sea Cucumbers, live, fresh or chilled 030819.10 Sea Cucumbers, frozen 030819.90 Sea Cucumbers, dried, salted or in brine
Croakers	030379.23 Yellow Croaker (Pseudosciaena) frozen, excluding fillets, livers and roes	030289.01 Yellow Croaker, fresh or chilled, excluding fillets, livers and roes 030389.03 Yellow croaker, frozen, excluding fillets, livers and roes 030569.60 Yellow croaker, in brine or salted but not dried or smoked

Source: Elaborated by using Hong Kong Customs and Statistics HS Codes from 2012, 2007, 2004

\*Clams refers to various families, including *Hiatellidae*, of which geoduck belongs to. Prior to 2012, the clam category did not list the scientific names.



**Appendix B: Luxury Focus Species Scientific Names**

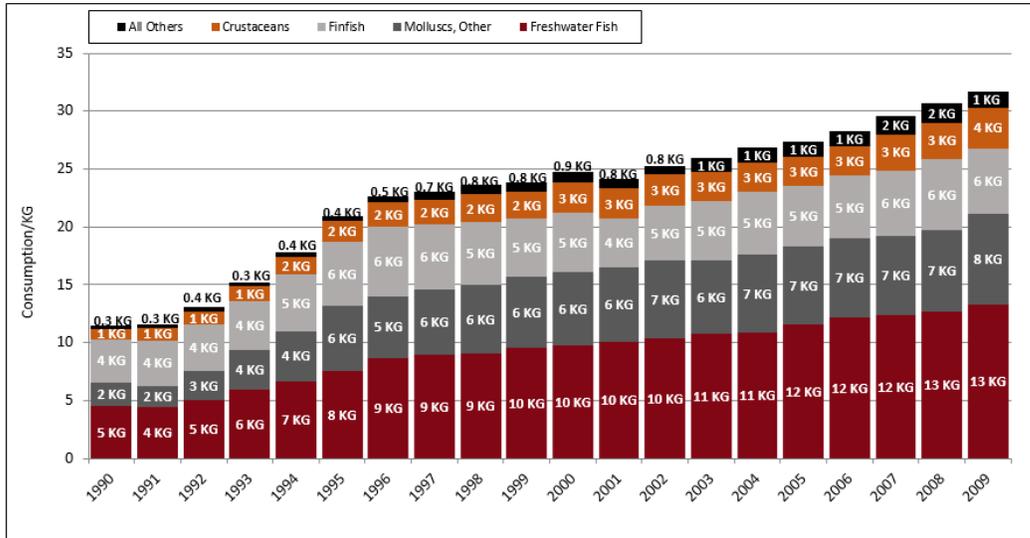
<b>Luxury Focus Species Common Name</b>		<b>Luxury Focus Species Scientific Name(s)</b>
<b>English</b>	<b>Spanish</b>	
Sea cucumber	Pepino de mar	<i>Parastichopus parvimensis</i> <i>Holothuria floridana</i> <i>Isostichopus badionotus</i> <i>Asitchopus multifidus</i> <i>Holothuria mexicana</i>
Geoduck	Almeja generosa	<i>Panopea generosa</i> <i>Panopea globosa</i>
Swim bladder; Fish maw; Buche (Various croaker species)	<i>Vejiga natatoria</i>	<i>Totoaba macdonaldi</i> <i>Cynoscion othonopterus</i> (Yellow croaker) <i>Ariopsis felis</i> <i>Bagre marinus</i>
Shark fin (Various species)	Aleta del tiburón	<i>Rhizoprionodon terraenovae</i> <i>Sphyma tiburo</i> <i>Carcharhinus limbatus</i> <i>Sphyma lewini</i> <i>Carcharhinus leucas</i> <i>Carcharhinus falciformis</i> <i>Carcharhinus porosus</i> <i>Carcharhinus brevipinna</i>
Cannonball jellyfish	Medusa bola de cañon	<i>Stomolophus meleagris</i>
Octopus	Pulpo	<i>Octopus maya</i> <i>Octopus vulgaris</i>
Swimming crab	Jaiba	<i>Callinectes bellicosus</i> (Sonora green swimming crab) <i>Callinectes arcuatus</i> <i>Callinectes toxotes</i> <i>Callinectes sapidus</i> <i>Callinectes rathbunae</i> <i>Callinectes bocourti</i> <i>Callinectes similis</i> <i>Callinectes danae</i> <i>Callinectes ornatus</i>
Sea urchin	Erizo del mar	<i>Parastichopus parvimensis</i> <i>Strongylocentrotus franciscanus</i> <i>Strongylocentrotus purpuratus</i>
Abalone	Abulón	<i>Haliotis fulgens</i> <i>Haliotis corrugate</i> <i>Haliotis cracherodii</i> <i>Haliotis sorenseni</i> <i>Haliotis rufescens</i>
Lobster	Langosta	<i>Panulirus interruptus</i> <i>Panulirus gracilis</i>

		<i>Panulirus inflatus</i> <i>Panulirus penicillatus</i> <i>Panulirus argus</i>
Seahorse	Caballito del mar	<i>Hippocampus erectus</i> <i>Hippocampus ingens</i> <i>Hippocampus reidi</i> <i>Hippocampus zosterae</i>

Source: Secretaria de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación. "Carta Nacional Pesquera." 2012; Source for seahorse: "Hippocampus Info."  
<http://www.hippocampusinfo.org/PartiesCountries/GlobalOther/Species/AllSpecies/tabid/163/Default.aspx> (accessed May 8, 2014)

## Appendix C: Supplementary Graphs and Tables (Mainland China and Hong Kong)

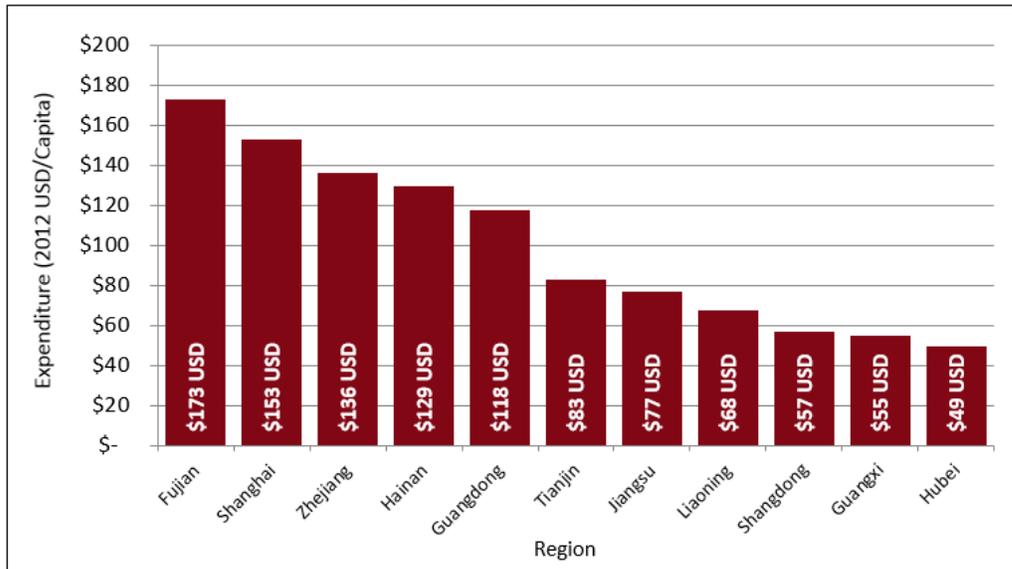
**Graph B: Chinese Seafood\* Consumption by Category**  
(Consumption/KG; 1990-2009)



Source: Food and Agriculture Organization

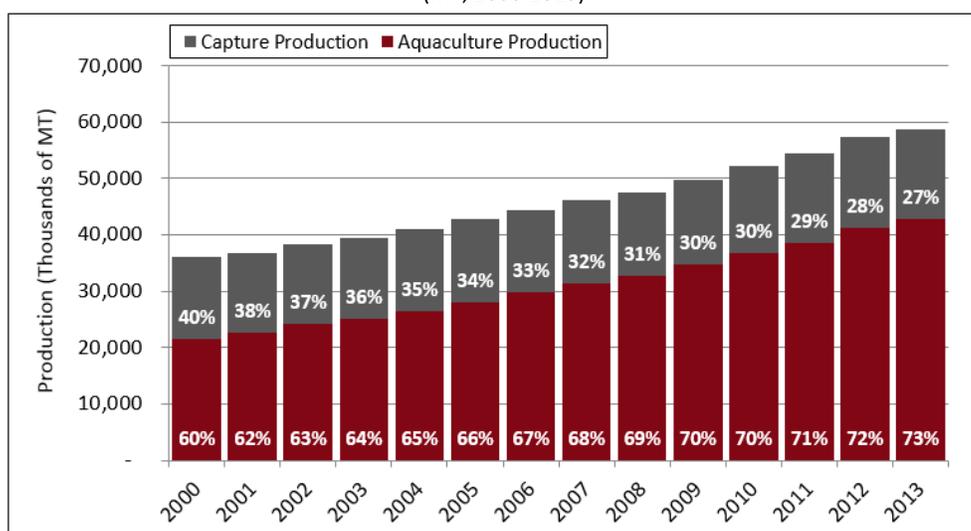
\*Includes saltwater and freshwater, wild-caught and farmed products

**Graph B: Urban Per Capita Expenditure on Seafood Products, by Region**  
(2012 USD/Capita; 2011)



Source: China Britain Business Council

**Graph C: Graph: Historic Chinese Marine Capture and Aquaculture Production (MT; 2000-2013)**



Source: FAO-OECD Agricultural Outlook 2013-2022

**Table C: Top Ten Suppliers of Hong Kong Luxury Focus Species Imports, by Volume (2004-2013)†**

LUXURY FOCUS SPECIES	SUPPLIERS (IN ORDER BY VOLUME)
<b>Sea Cucumber</b>	Japan, Indonesia, Philippines, Papua New Guinea, USA, Fiji, Madagascar, Canada, Yemen, Mainland China
<b>Shark Fin</b>	Spain, Singapore, Taiwan, Indonesia, United Arab Emirates, Costa Rica, Yemen, USA, Mexico, Japan
<b>Clams, Cockles, Arkshells*</b>	USA, Mainland China, United Kingdom, Philippines, Canada, India, Pakistan, Mexico, Norway, New Zealand
<b>Fish Heads, Tails and Maws**</b>	Brazil, Mainland China, Tanzania, India, Uganda, Kenya, Guyana, Indonesia, Ecuador, Guinea
<b>Yellow Croaker</b>	Mainland China, Japan, Indonesia, Philippines, Papua New Guinea, Fiji, Madagascar, USA, Tonga, Mexico
<b>Crab</b>	Mainland China, Bangladesh, Philippines, Indonesia, Canada, Vietnam, Thailand, Chile, USA, Australia
<b>Octopus</b>	Mainland China, Japan, Vietnam, Thailand, Indonesia, India, Philippines, USA, African Countries/Territories (NESOI), Chile
<b>Abalone</b>	Australia, South Africa, Mainland China, Chile, Philippines, Canada, USA, Mozambique, Japan, Senegal
<b>Seahorse</b>	Thailand, Guinea, Philippines, Malaysia, Peru, Senegal, Mexico, India, Mainland China, Togo
<b>Jellyfish</b>	Mainland China, Japan, Malaysia, Singapore, Honduras, Canada, Taiwan
<b>Sea Urchin</b>	Chile, Canada, Singapore, Mainland China, USA, Japan, Mexico, Taiwan, Korea, Bulgaria
<b>Lobster and Sea Crawfish</b>	Australia, USA, New Zealand, South Africa, Canada, Indonesia, Mainland China, Mexico, Philippines, India

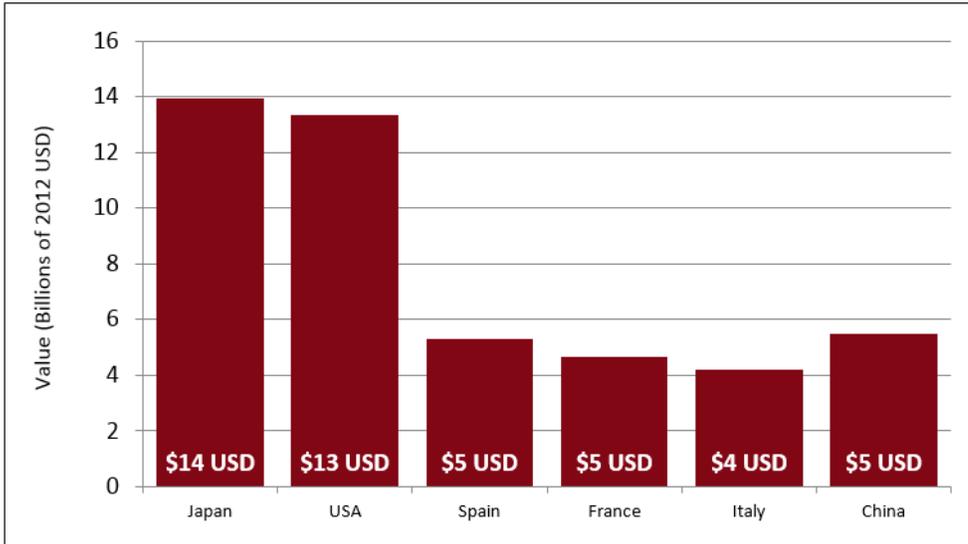
Source: Hong Kong Customs and Statistics

†Not all species appear in the data for the full 2004-2013 time period

\*Geoduck does not have its own product specification and is grouped into the larger category 'clams, cockles and ark shells'

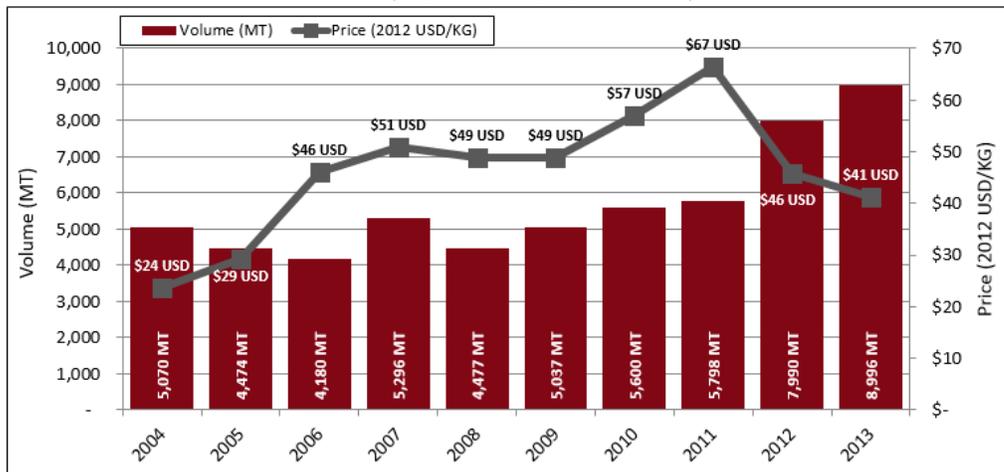
\*\*Swim bladder does not have its own product specification and is grouped into the larger category 'fish heads, tails and maws'

**Graph E: Countries Importing the Most Seafood, by Average Annual Value**  
(Billions of 2012 USD; 2008-2012)



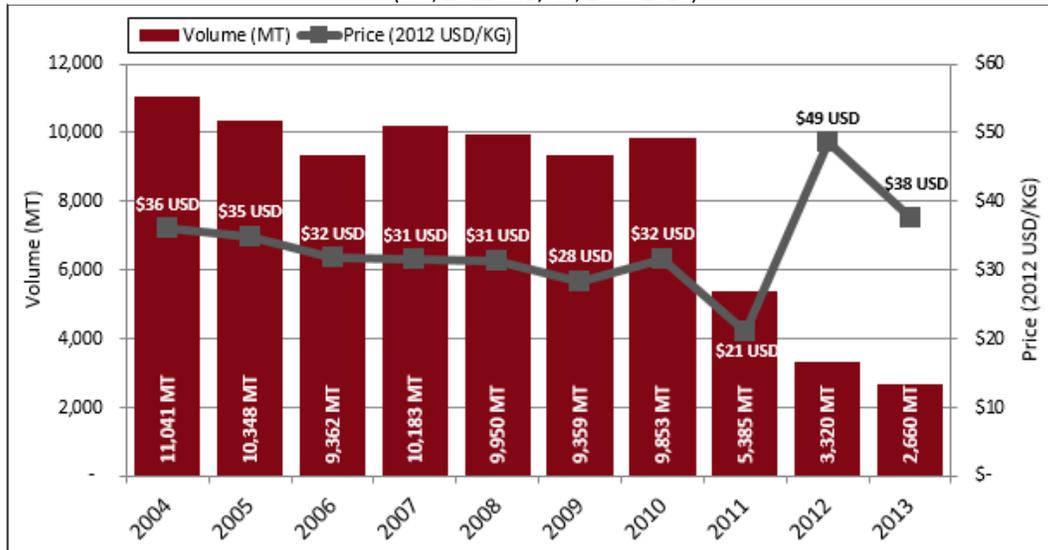
Source: UN COMTRADE

**Graph E: Aggregate Hong Kong Imports of Sea Cucumber, All Sources**  
(MT; 2012 USD/KG; 2004-2013)



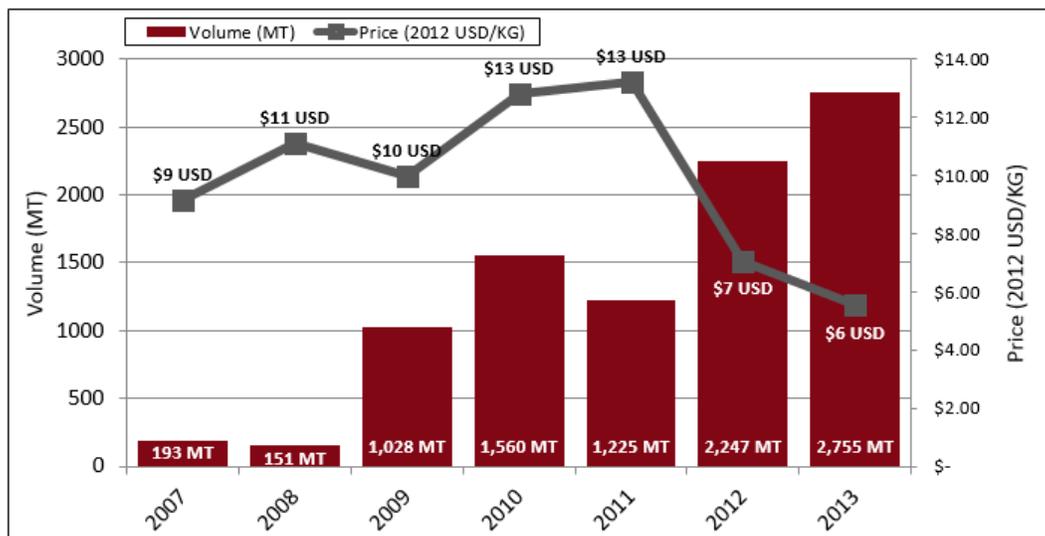
Source: Hong Kong Customs and Statistics Department

**Graph G: Aggregate Hong Kong Imports of Shark Fin, All Sources**  
(MT; 2012 USD/KG; 2004-2013)



Source: Hong Kong Customs and Statistics Department

**Graph G: Aggregate Hong Kong Imports of Geoduck\*, All Sources**  
(MT; 2012 USD/KG; 2004-2013)



Source: Hong Kong Customs and Statistics Department

\*Geoduck does not have its own product specification and is grouped into the larger category 'clams,

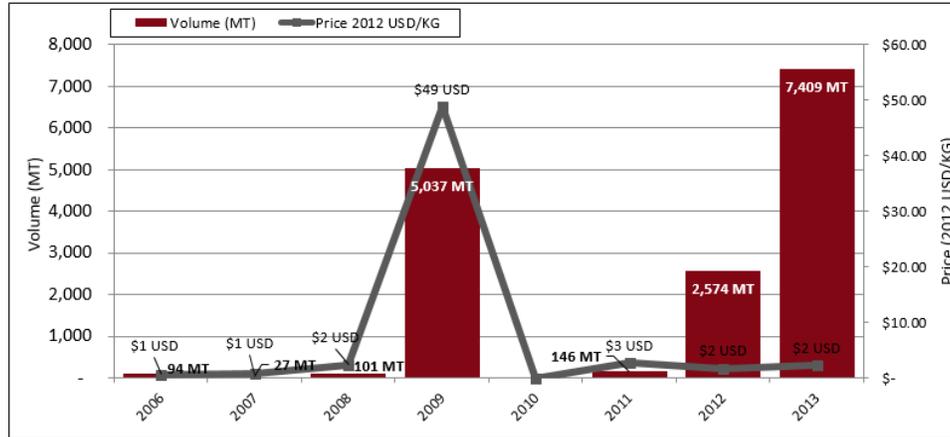
**Table D: Hong Kong Imports of Swim Bladder\*, All Sources**  
(MT; 2012 USD/KG; 2012-2013)

	2012	2013
<b>Volume (MT)</b>	2,279	2,598
<b>Value (2012 USD)</b>	\$ 161,059,484	\$ 214,587,003
<b>2012 USD/Kg</b>	\$ 70.68	\$ 82.60

Source: Hong Kong Customs and Statistics Department

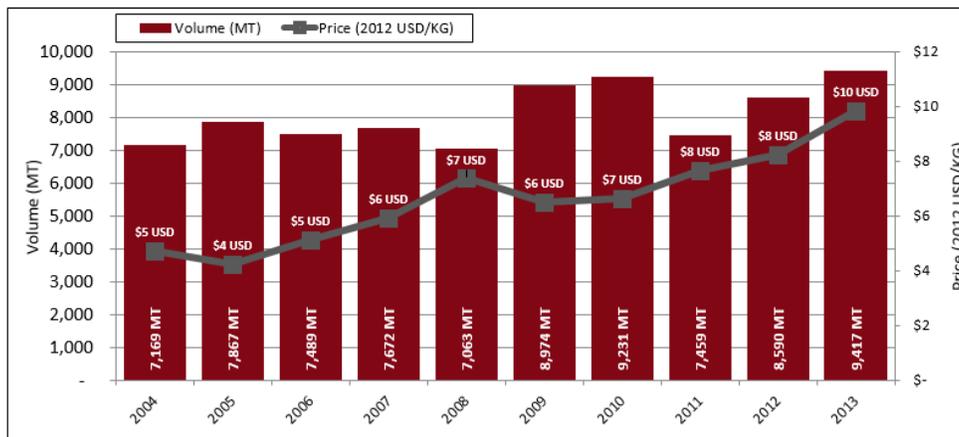
\*Swim bladder does not have its own product specification and is grouped into the larger category 'fish heads, tails and maws'

**Graph J: Aggregate Hong Kong Imports of Yellow Croaker, All Sources**  
(MT; 2012 USD/KG; 2004-2013)



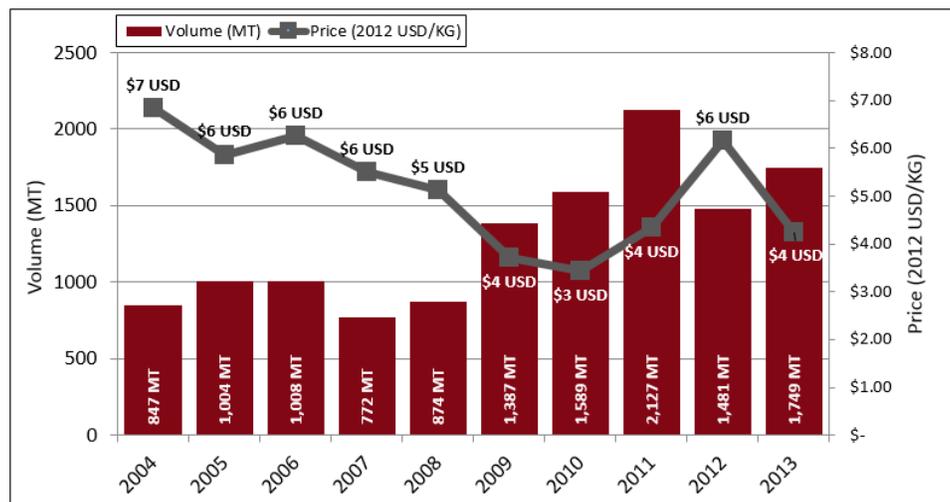
Source: Hong Kong Customs and Statistics Department

**Graph J: Aggregate Hong Kong Imports of Crab, All Sources**  
(MT; 2012 USD/KG; 2004-2013)



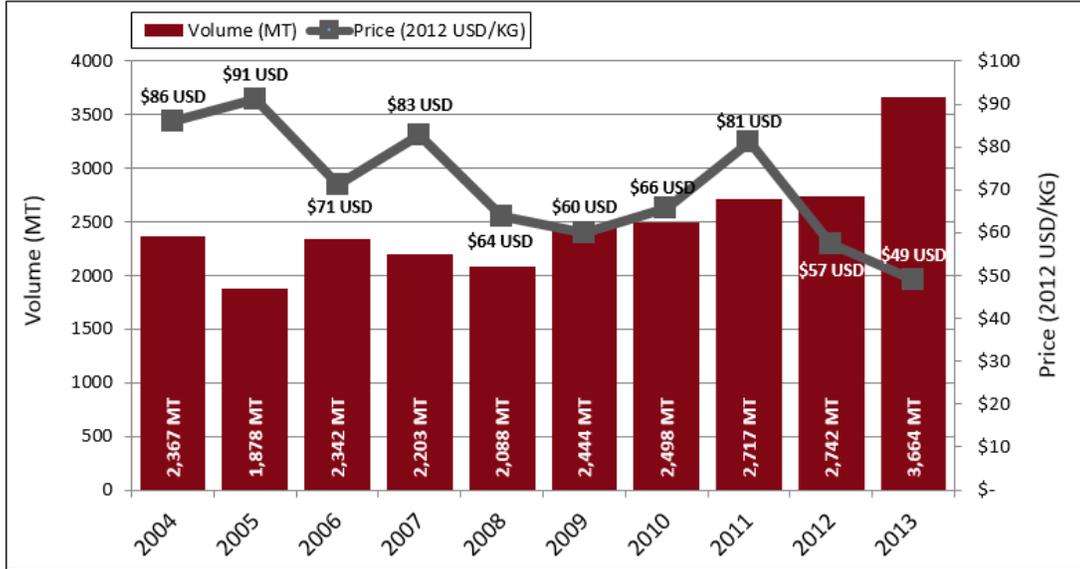
Source: Hong Kong Customs and Statistics Department

**Graph J: Aggregate Hong Kong Imports of Octopus, All Sources**  
(MT; 2012 USD/KG; 2004-2013)



Source: Hong Kong Customs and Statistics Department

**Graph K: Aggregate Hong Kong Imports of Abalone, All Sources**  
(MT; 2012 USD/KG; 2004-2013)



Source: Hong Kong Customs and Statistics Department

**Table F: Aggregate Hong Kong Imports of Jellyfish, All Sources**  
(MT; 2012 USD/KG; 2012-2013)

	2012	2013
<b>Volume (MT)</b>	1,093	754
<b>Value (2012 USD)</b>	\$ 2,132,769	\$ 1,301,230
<b>Price (2012 USD/KG)</b>	\$ 1.95	\$ 1.73

Source: Hong Kong Customs and Statistics Department

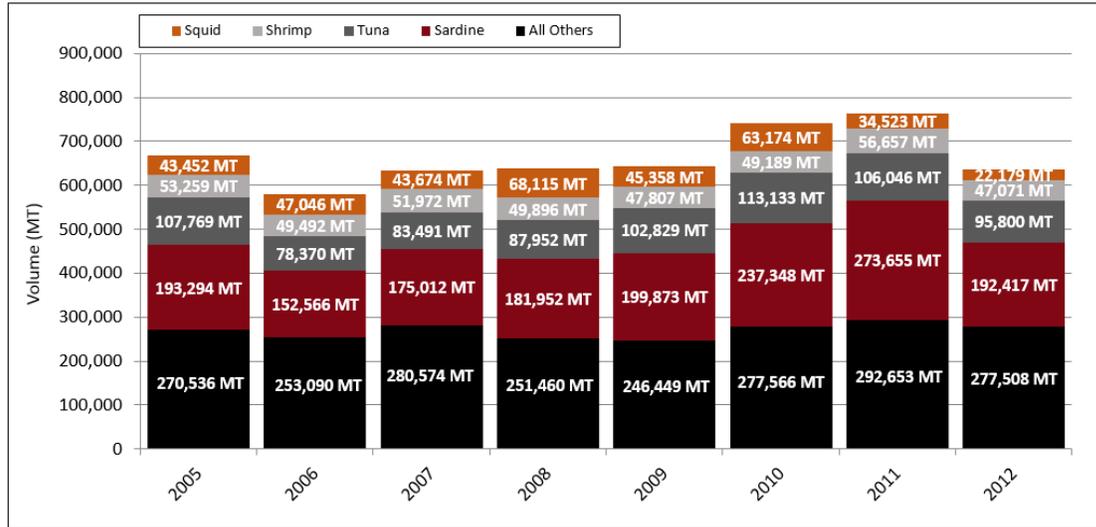
**Table F: Aggregate Hong Kong Imports of Sea Urchin, All Sources**  
(MT; 2012 USD/KG; 2012-2013)

	2012	2013
<b>Volume (MT)</b>	211	176
<b>Value (2012 USD)</b>	\$ 3,256,607	\$ 4,421,587
<b>Price (2012 USD/KG)</b>	\$ 15	\$ 25

Source: Hong Kong Customs and Statistics Department

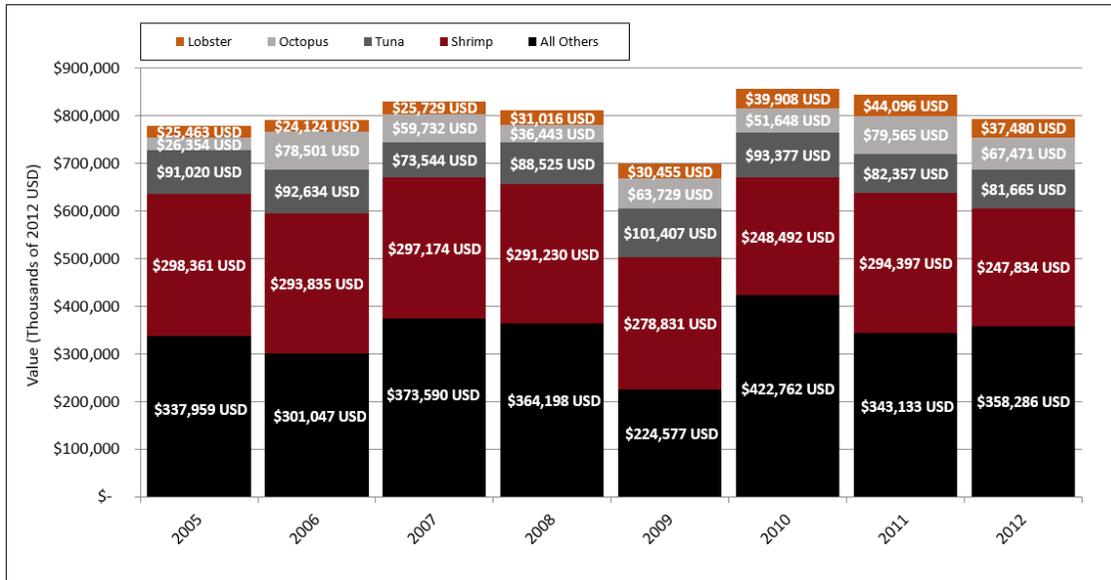
**Appendix D: Supplementary Graphs and Tables (Mexico)**

**Graph M: Most Productive Mexican Fisheries by Landed Volume**  
(MT; 2005-2012)



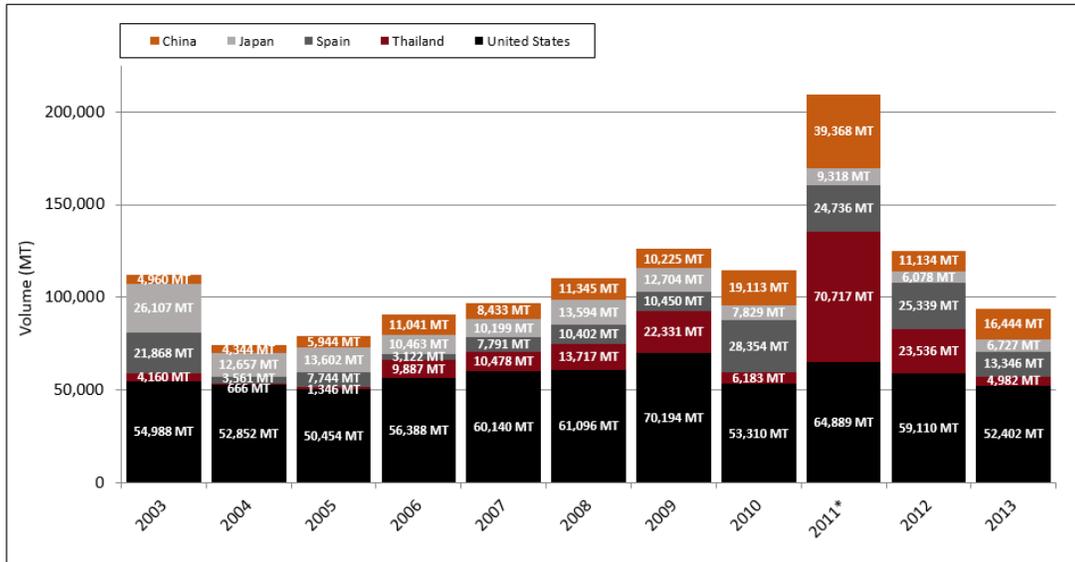
Source: CONAPESCA

**Graph M: Largest Mexican Fisheries by Ex-Vessel Value**  
(Thousands of 2012 USD; 2005-2012)



Source: CONAPESCA

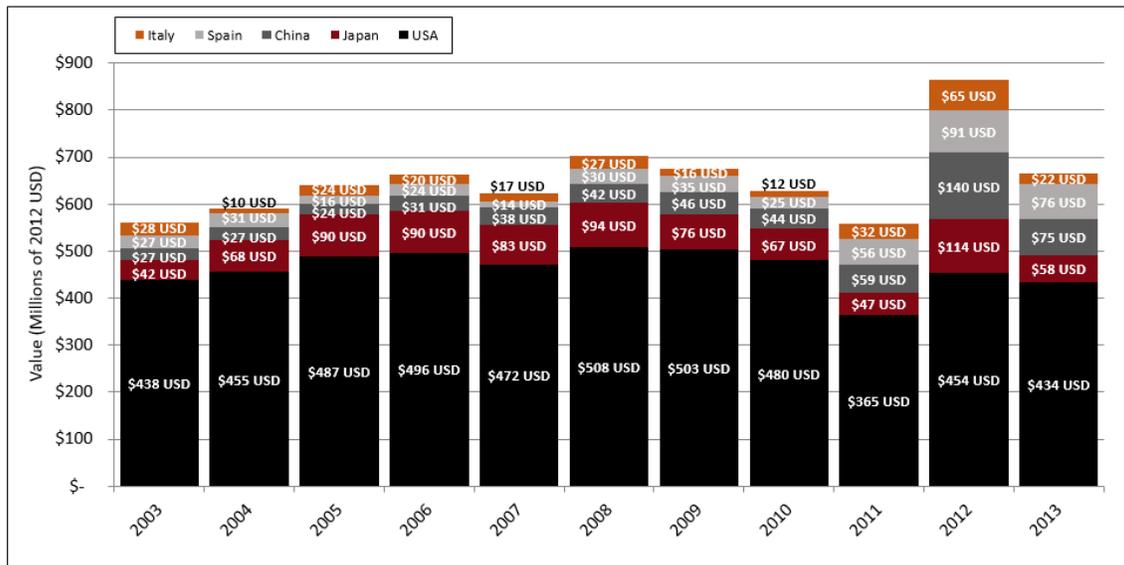
**Graph O: Global Imports of Fish and Crustaceans, Mollusks and other Aquatic Invertebrates from Mexico, by Volume (MT; 2003-2013)**



Source: SIAVI

\*CapLog has not been able to determine the reason for the significant spike in China and Thailand's imports in 2011

**Graph O: Global Imports of Fish and Crustaceans, Mollusks and other Aquatic Invertebrates from Mexico, by Value (2012 USD; 2003-2013)**



Source: SIAVI

\*CapLog has not been able to determine the reason for the significant spike in China and Thailand's imports in 2011

**Table J: Annual Mexican Production of Luxury Focus Species**  
(MT; 2005-2012)

SPECIES	2005	2006	2007	2008	2009	2010	2011	2012
Geoduck	696	1,293	1,185	1,245	1,282	2,058	2,225	2,102
Sea Cucumber	416	467	501	391	461	2,614	2,034	1,585
Shark Fin*	815	729	849	749	833	873	801	754
Swim Bladder†	136.93	117.21	205.67	204.01	250.51	272.31	202.10	192.14
Sea Urchin	1,903	1,606	1,774	2,036	2,676	3,370	2,941	3,186
Croaker	5,071	4,341	7,617	7,556	9,278	10,085	7,485	7,116
Crab	20,372	24,101	26,109	28,032	20,577	22,317	20,096	21,359
Octopus	10,112	25,351	18,548	11,917	23,848	21,615	25,598	28,906

Sources: CONAPESCA; CapLog 2012; Barron 2011; Caplog 2013

\* Based on an estimated fin weight of 4.5% of total landed weight

† Based on an estimated swim bladder weight of 2.71% of total landed weight for the curvina golfina fishery

**Table J: Annual Ex-Vessel Prices of Luxury Focus Species**  
(2012 USD/KG; 2005-2012)

	2005	2006	2007	2008	2009	2010	2011	2012
Sea Cucumber	\$ 0.36	\$ 0.43	\$ 0.45	\$ 0.43	\$ 0.50	\$ 0.97	\$ 0.98	\$ 0.66
Shark Fin*	\$ 0.13	\$ 0.10	\$ 0.10	\$ 0.08	\$ 0.10	\$ 0.11	\$ 0.11	\$ 0.09
Geoduck	\$ 4.63	\$ 4.51	\$ 4.42	\$ 4.24	\$ 3.70	\$ 3.98	\$ 3.94	\$ 4.14
Swim Bladder†	\$ 1.08	\$ 1.57	\$ 2.57	\$ 3.94	\$ 4.30	\$ 6.49	\$ 9.16	\$ 13.27
Croaker	\$ 0.14	\$ 0.16	\$ 0.10	\$ 0.12	\$ 0.15	\$ 0.32	\$ 0.39	\$ 0.30
Sea Urchin	\$ 0.15	\$ 0.14	\$ 0.14	\$ 0.13	\$ 0.12	\$ 0.13	\$ 0.12	\$ 0.12
Crab	\$ 0.36	\$ 0.39	\$ 1.06	\$ 2.06	\$ 2.34	\$ 0.68	\$ 0.91	\$ 1.61
Octopus	\$ 0.44	\$ 0.13	\$ 0.24	\$ 0.84	\$ 0.41	\$ 0.46	\$ 0.41	\$ 0.46

Sources: CONAPESCA; CapLog 2012; Barron 2011; Caplog 2013

\* Shark fin prices based on 2011 prices from the Gulf of Mexico.

† Swim bladder price based on estimates from the curvina golfina fishery.

**Table J: Annual Ex-Vessel Value of Luxury Focus Species**  
(Thousands of 2012 USD; 2005-2012)

SPECIES	2005	2006	2007	2008	2009	2010	2011	2012
Geoduck	\$ 3,226	\$ 5,829	\$ 5,237	\$ 5,276	\$ 4,739	\$ 8,196	\$ 8,762	\$ 8,704
Sea Cucumber	\$ 687	\$ 687	\$ 796	\$ 878	\$ 1,346	\$ 3,257	\$ 2,892	\$ 2,103
Shark Fin*	\$ 2,638	\$ 2,293	\$ 2,619	\$ 2,216	\$ 2,151	\$ 2,426	\$ 2,202	\$ 1,955
Swim Bladder‡	\$ 148	\$ 184	\$ 529	\$ 805	\$ 1,077	\$ 1,766	\$ 1,852	\$ 2,550
Croaker	\$ 6,994	\$ 6,512	\$ 9,918	\$ 8,605	\$ 10,178	\$ 14,183	\$ 9,461	\$ 11,360
Sea Urchin	\$ 4,415	\$ 3,402	\$ 4,542	\$ 10,003	\$ 9,863	\$ 9,939	\$ 10,480	\$ 13,422
Crab	\$ 23,567	\$ 26,922	\$ 28,308	\$ 31,718	\$ 20,551	\$ 23,348	\$ 21,831	\$ 24,228
Octopus	\$ 26,354	\$ 78,501	\$ 59,732	\$ 36,443	\$ 52,263	\$ 51,648	\$ 79,565	\$ 67,471

Sources: CONAPESCA; CapLog 2012; Barron 2011; Caplog 2013

\* Shark fin prices based on 2011 prices from the Gulf of Mexico.

‡ Swim bladder price based on estimates from the curvina golfina fishery.

**Table J: Price of Luxury Focus Species Imports from Mexico**  
(2012 USD/KG; 2004-2013)

SPECIES	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2004-2013
Sea Cucumber	\$ 34.42	\$ 80.48	\$ 43.33	\$ 68.64	\$ 48.06	\$ 32.15	\$ 34.33	\$ 29.08	\$ 47.27	\$ 33.11	\$ 45.09
Clams (Geoduck)*	N/A	N/A	N/A	\$ 7.70	\$ 10.59	\$ 10.95	\$ 7.72	\$ 7.83	\$ 19.11	\$ 6.50	\$ 10.06
Shark Fin	\$ 89.77	\$ 86.01	\$ 74.65	\$ 91.12	\$ 62.30	\$ 73.26	\$ 56.04	\$ 60.49	\$ 70.52	\$ 47.65	\$ 71.18
Fish maw, tails, heads (Swim Bladder)**	N/A	\$ 64.33	\$ 40.10	\$ 52.22							

Source: Hong Kong Customs and Statistics Department

\*Geoduck does not have its own product specification and is grouped into the larger category 'clams'

\*\*Swim bladder does not have its own product specification and is grouped into the larger category 'fish heads, tails and maws'

## Appendix E: Interview and Site Visit Data Collection Tool

### Entrevista de Exportadores Mexicanos

#### Exportadores Mexicanos:

- Empresas con sede en México que actualmente exportan, o en el pasado han exportado, mariscos directamente a China y/o Hong Kong.
- Mariscos exportados incluyen productos vivos, frescos/refrigerados, congelados, y procesados de la pesca de captura.
- CapLog intentará entrevistar a un grupo diverso de empresas, pero las entrevistas se centrarán en los exportadores de las especies focales (*Grada 1*: pepino de mar, almeja generosa, aleta de tiburón, buche; *Grada 2*: jaiba, pulpo, herizo de mar, aguamala, chano/curvina)

Cantidad de entrevistas: 10-15

#### Preguntas:

1. **Información de la Empresa** (Todos los resultados serán de carácter estrictamente confidencial, es decir, que no estarán asociados con el nombre de una empresa en particular. Los resultados agregados de la encuesta también serán compartidos con los entrevistados en cuanto la terminación del proyecto.)

Nombre del entrevistado	
Nombre de la empresa	
Datos de contacto	Correo electrónico: Teléfono:
Dirección	
¿La empresa tiene una presencia física o representación física fuera de México?	<input type="checkbox"/> Sí <input type="checkbox"/> No ¿Qué tipo de presencia? (por ejemplo, una oficina extranjera, representantes de ventas, un contrato con una empresa local, un centro de distribución, etc.)
¿En qué sectores de la cadena de valor es la empresa activa? (Seleccione todas las que apliquen.)	<input type="checkbox"/> Captura o cosecha <input type="checkbox"/> Venta de peces vivos <input type="checkbox"/> Procesamiento <input type="checkbox"/> Distribución <input type="checkbox"/> Venta al por mayor <input type="checkbox"/> Venta directa al consumidor
¿La empresa es de dueños mexicanos?	<input type="checkbox"/> Sí <input type="checkbox"/> No ¿De cuáles países? ¿Aproximadamente, qué porcentaje de la empresa es de propiedad extranjera?
¿Se venden cuales tipos de productos finales? (Seleccione todas las que apliquen.)	<input type="checkbox"/> Pez vivo <input type="checkbox"/> Destripado (Fresco/Refrigerado o Congelado?) <input type="checkbox"/> La cabeza y la tripa (Fresco/Refrigerado o Congelado?) <input type="checkbox"/> Filetes (Fresco/Refrigerado o Congelado?) <input type="checkbox"/> Seco o salado <input type="checkbox"/> Harina de pescado <input type="checkbox"/> Otro: _____
¿Qué <u>volumen</u> total de mariscos se exportó en 2012?	
¿Qué <u>valor</u> total de mariscos se exportó en 2012?	



#### 4. La Demanda China:

¿Ha cambiado la demanda china de su producto en los últimos 5 años?	<input type="checkbox"/> Sí <input type="checkbox"/> No ¿Cuánto ha cambiado el número de compradores (o consultas) de su producto en los últimos 5 años? ¿Cuánto ha cambiado la cantidad comprada por el comprador (u otras medidas impulsadas por la demanda) en los últimos 5 años? ¿Por qué?
¿Han afectado sus precios los cambios de la demanda china hasta la fecha? ¿Qué piensa que pasará con el comercio con china en los próximos 5 años?	<input type="checkbox"/> Sí <input type="checkbox"/> No ¿Cuánto ha cambiado el precio (en %) de su producto en los últimos 5 años? ¿Cuánto cambiarán los precios (en %) de su producto en los próximos 5 años? ¿Por qué?
¿Qué es su estrategia para responder a los cambios en la demanda china?	
¿Qué preocupaciones tiene con respecto a los cambios en la demanda china?	
¿En comparación a otros mercados extranjeros, que tal los chinos? ¿Es fácil trabajar con ellos? ¿Por qué? Es difícil? ¿Por qué?	

#### 5. La Oferta Mexicana:

¿Han notado cambios en México con respecto a <u>la disponibilidad</u> de los productos principales que exportan a China?	<input type="checkbox"/> Sí <input type="checkbox"/> No ¿Qué cree usted que es la causa? ¿Los cambios han afectado su capacidad de vender el producto en China?
¿Han notado cambios en México con respecto a <u>la calidad</u> de los productos que exportan a China?	<input type="checkbox"/> Sí <input type="checkbox"/> No ¿Qué cree usted que es la causa? ¿Los cambios han afectado su capacidad de vender el producto en China?
¿Han notado cambios en México con respecto a <u>los precios</u> de los productos que exportan a China?	<input type="checkbox"/> Sí <input type="checkbox"/> No ¿Qué cree usted que es la causa? ¿Los cambios han afectado su capacidad de vender el producto en China?

#### 6. Políticas y Prácticas Mexicanas

¿La empresa participa con una asociación pública/privada/sin fines de lucro (por ejemplo, CANAINPESCA o PROMEXICO) para promover las exportaciones pesqueras mexicanas?	<input type="checkbox"/> Sí <input type="checkbox"/> No ¿Cuáles?
¿Qué crees que debe ser el papel del gobierno mexicano para facilitar o ayudar el comercio mexicano-chino de mariscos? (Nota: Mantenga esta pregunta	

abierta.)	
¿Su empresa ha estado impactado por los cambios en las certificaciones de exportación en los últimos años?	

## 7. Comentario del Diseño del Estudio

¿Qué información sobre la demanda china sería de interés para Ud. y su empresa?	
¿Algún otro comentario o consejo?	

### Hong Kong Seafood Market Observations and Interviews 香港海鮮市場的觀察和訪問

#### Target Markets:

##### 受訪市場

- Identify and describe 1-3 of the largest wholesale seafood markets in Hong Kong, as well as ~3 neighborhood wet markets:
- 找出和描述 1-3 個在香港最大的海鮮批發市場和大約 3 個社區街市：
  - How many vendors/stalls are present within each market?
  - 海鮮市場內有多少個賣家／商舖？
  - What is the volume of seafood that passes through each market each day? Each year?
  - 海鮮市場每天的營業量是多少？每年的營業量是多少？
  - How many product types are sold?
  - 海鮮市場內的產品類型有多少種？
  - Who are the market's target clients (e.g., Restaurants? Individual consumers? Food service? Seafood exporters (to mainland China)?)
  - 誰是該海鮮市場的目標客戶（例如：餐館？個別消費者？餐飲服務業？海鮮出口商（中國大陸）？）
  - Approximately how many customers visit each market every day?
  - 每天大約有多少客戶到該海鮮市場購物？
  - How many vendors offer the identified focus species in each market?
  - 該海鮮市場內共有多少個供應商／賣家售賣各種重點品種？
  - Try to map out product flow
  - 嘗試畫出產品的流程

#### Target Vendors:

##### 受訪供應商

- 15-20 diverse vendors (in terms of stall size, product offerings, etc.), with a special focus on vendors of the focus species
- 15-20 個不同（攤位面積、產品種類等）供應商／賣家，特別是有販賣重點品種的供應商／賣家
- Ask permission of the vendor owner, and if possible, take pictures of the stall space and specific products.
- 取得供應商／賣家的許可後，拍下攤位空間和產品的照片

**Focus Species 重點品種:**

Top Tier 第一層:

- Swim bladder (multiple species) 花膠，魚鰾
- Shark fin (multiple species) 魚翅
- Geoduck 象拔蚌
- Sea cucumber 海參

Second Tier 第二層:

- Swimming crab 花蟹
- Octopus 章魚，八爪魚
- Sea urchin 海膽
- Jellyfish 海蜇
- Croakers 石首魚（黃花，青鱸，鰻魚）

**COMPLETE THE FOLLOWING TABLES FOR EACH VENDOR STALL OBSERVED:**

為每個受訪供應商／賣家填寫下列表格：

**1. Types of Seafood Sold  
販賣的海鮮品種／種類**

<p><b>Names of ALL MAJOR SPECIES/PRODUCTS SOLD in this vendor stall:</b> 在此供應商有售的所有主要品種名稱：</p>
--

**COMPLETE THE FOLLOWING TABLE ONLY FOR THE FOCUS SPECIES:**

只針對重點品種填寫以下表格：

\*Indicates prioritized questions \*號表示重要問題

NAME 名稱	How is the species listed/named in this stall? 該賣家對海鮮品種的名稱？	SPECIES 1 品種一	SPECIES 2 品種二	SPECIES 3 品種三	SPECIES 4 品種四	SPECIES 5 品種五
PRICE* 價格	Include units 列出單位	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發
QUALITY 質量	Does the product appear fresh, clean, etc.? 產品的外觀（新鮮度？衛生？）	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均

<b>PRODUCT PRESENTATION*</b> 產品展示	Does the vendor sell processed products? 賣家有賣先處理的海鮮嗎？	<input type="checkbox"/> Only sells Whole 整條/整隻 <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____	<input type="checkbox"/> Only sells Whole 整條/整隻 <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____	<input type="checkbox"/> Only sells Whole 整條/整隻 <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____	<input type="checkbox"/> Only sells Whole 整條/整隻 <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____	<input type="checkbox"/> Only sells Whole 整條/整隻 <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____
	Did the vendor process the product before sale?*	If yes, select type: <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____	If yes, select type: <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____	If yes, select type: <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____	If yes, select type: <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____	If yes, select type: <input type="checkbox"/> Gutted 去內臟 <input type="checkbox"/> Fillet 魚片 <input type="checkbox"/> Other 其他: _____
	How is this product consumed? What is it used for?*(Provide rough % if possible.) 該品種的處理方法或食法 (請估計所佔%)	<input type="checkbox"/> Whole 整條 / 個 <input type="checkbox"/> Surimi 魚糜 <input type="checkbox"/> Sashimi 魚生 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Whole 整條 / 個 <input type="checkbox"/> Surimi 魚糜 <input type="checkbox"/> Sashimi 魚生 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Whole 整條 / 個 <input type="checkbox"/> Surimi 魚糜 <input type="checkbox"/> Sashimi 魚生 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Whole 整條 / 個 <input type="checkbox"/> Surimi 魚糜 <input type="checkbox"/> Sashimi 魚生 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Whole 整條 / 個 <input type="checkbox"/> Surimi 魚糜 <input type="checkbox"/> Sashimi 魚生 <input type="checkbox"/> Other 其他:
	Which product presentations are the most popular for this seafood?*					
	How do consumers assess quality in this product? What comprises "quality?" (Circle the	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:

	most important driver if more than one is selected.) 客戶怎樣評估產品的質量呢？					
	What are the competing products? (Include competing products' country of origin.) 該產品的競爭品是什麼？					
<b>DESTINATION</b> 目的地	What types of clients purchase this product? 購買該產品的客戶屬於哪個種類？	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:
	Where are the clients located? (Provide rough % if possible) 客戶所在地 (請估計所佔%)	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:
<b>SOURCE</b> 貨源	From where do you source this product? (Country, etc.) 這產品從哪裡來？					
	Do you prefer or avoid any particular country of origin? If so, which	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會

	countries? Why? (e.g. because of price or quality?) 您會優先選擇哪裡來的產品？會避免哪裡來的產品？為什麼？（價格？質量？）					
PRICE* 價格	Do the prices of this product vary seasonally? If so, why?*	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會	<input type="checkbox"/> YES 會 <input type="checkbox"/> NO 不會
	What are the highest and lowest prices?*	Highest 最高: Lowest 最低:				
	What are the most important drivers of price for this product?*(Circle the most important driver if more than one is selected) 對價格最有影響力的因素 (如選擇多於一個請圈出最重要的因素)	<input type="checkbox"/> Quality 產品質素 <input type="checkbox"/> Time at market 每天時間 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Quality 產品質素 <input type="checkbox"/> Time at market 每天時間 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Quality 產品質素 <input type="checkbox"/> Time at market 每天時間 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Quality 產品質素 <input type="checkbox"/> Time at market 每天時間 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Quality 產品質素 <input type="checkbox"/> Time at market 每天時間 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:
SUPPLY 供應	Is the product available for sale in this stall all year round? 該產品全年有售嗎？	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有

	<p>How does the availability of the product fluctuate? <i>Why does it change?</i> 該產品採購難易度有變化嗎？為什麼</p>	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:
	<p>Have you seen the available <b>volume</b> of this product change over the last 5 years? <i>If so, how?</i> 在過去 5 年，此產品的流量有變化嗎？怎樣的變化？</p>	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有
	<p>Have you seen the <b>size</b> of this fish change over the last 5 years? <i>If so, how?</i> 在過去 5 年，此產品的大小有變化嗎？怎樣的變化？</p>	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有
<p><b>DEMAND</b> * 需求</p>	<p>Have you seen the demand for this product change over the last 5 years? <i>If so, how? *</i> 在過去 5 年，此產品的需求有變化嗎？怎樣的變化？</p>	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有
<p><b>PROFIT</b> 利潤</p>	<p>How much do you pay for this fish? 此產品您付多少錢？</p>					

	OPTIONAL: What is your profit margin for this product? 此產品利潤率多少?					
--	--	--	--	--	--	--

**2. Additional Questions for Vendors:**  
給賣家的其他問題

**THESE QUESTIONS ARE GENERAL, I.E. APPLY TO ALL SPECIES/PRODUCTS SOLD WITHIN THE STALL:**

這些問題適用於店內的所有海鮮品種：

\*Indicates prioritized questions \*號表示重要問題

<b>BUSINESS</b> 業務	Job title of interviewee 受訪者的頭銜	
	What fees do you need to pay to the market? 你需要向市場支付哪些費用?	
	How many people are employed here (estimate)? 有多少人在這裡就業(估計)?	
<b>SOURCING</b> 來源	From how many different sources do you obtain your product(s)? 您有幾個海鮮貨源?	
	From how many different locations/geographies do you obtain your product(s)? 您的海鮮產品從多少個地區來?	
	Generally, what changes in <b>prices</b> have you noticed over the past 5 years? * 在過去的5年, 您有注意到海鮮價格上有什麼樣的變化嗎?	
	Which luxury seafood products have increased/decreased most in <b>price</b> over the past 5 years? 在過去的5年, 有那種貴價海鮮在價格上有上升或下降嗎?	
	Generally, what changes in <b>supply</b> have you noticed over the past 5 years? * 在過去的5年, 您有注意到海鮮供應上有什麼樣的變化嗎?	
	Which luxury seafood products have increased/decreased most in <b>supply</b> over the past 5 years? 在過去的5年, 有那種貴價海鮮在供應上有上升或下降嗎?	
	What have been your primary challenges in sourcing your products? How have you met them? 在採購上有哪些主要挑戰? 你如何克服這些挑戰?	

	What do you think will be the biggest change in supply over the next 5 years? 你認為在貨源上於未來 5 年最大的變化將會是什麼？	
<b>SALES 銷售</b>	What types of clients purchase your products? <i>(Please select all that apply.)</i> 您的主要客戶類型（請選擇所有適用的選項）	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:
	Where are your clients located? <i>(Please select all that apply.)</i> 您的客戶多從哪裡來？（請選擇所有適用的選項）	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:
	In addition to selling product here, do you sell your product for distribution in other markets/regions? If so, where? 除了在這裡售賣海鮮產品，您還有在其他市場／地區買賣、轉銷或代理嗎？有的話，在哪裡？	
	Which products are most popular with your customers? Why? What makes it so popular? (e.g. origin) 哪些產品最受客戶歡迎？為什麼？什麼令這產品受歡迎？（例如產地）	
	How have these tastes changed over the past 5 years? 在過去的 5 至 10 年，客戶的喜好有改變嗎？	
	Which products are most profitable for you? 哪些產品最賺錢？	
	What influence do holidays/festivals in Hong Kong have on your prices? Which are the biggest holidays/festivals for seafood sales? 香港的節日對海鮮的售價有什麼影響？哪幾個節日售出最多海鮮？	
	What do you think will be the biggest change in sales you will see over the next 5 years? 你認為在銷售上於未來 5 年最大的變化將會是什麼？	

### Hong Kong Restaurant Observations and Interviews

#### 香港餐廳的觀察和訪問題目

#### Target Restaurants 目標餐廳:

- ~30 restaurants in Hong Kong:  
~30 家香港餐館／餐廳：
  - Variety of cost-points: from cheap fast food to white tablecloth dining  
不同的價格：從便宜快餐到高級餐廳
  - Variety of cuisines: sushi, hot pot, dim sum, live fish, Szechuan, etc.

各種類型的菜色（包括不同的國家和烹飪法）：壽司、火鍋、點心、活海鮮、川菜等

- Variety of locations/neighborhoods  
不同的地區
- Variety of ownership structures: chains, family-owned, etc.  
不同所有權和管理結構：連鎖店、集團式經營、家庭／小資生意等
- Variety of clientele: business crowd, foreigners, young people/students, families, etc.  
不同的顧客群：商務、外國人、年輕人/學生、家庭等
- Ask permission of the restaurant manager/owner, and if possible, take pictures of the restaurant space and specific dishes.  
經餐廳業主/經理許可後，拍下餐廳門面、內在環境和提及的菜餚的照片。
- \* Indicates prioritized questions
- 號表示重要問題

**Focus Species 重點品種:**

Top Tier 第一層:

- Swim bladder (multiple species) 花膠，魚鰾
- Shark fin (multiple species) 魚翅
- Geoduck 象拔蚌
- Sea cucumber 海參

Second Tier 第二層:

- Swimming crab 花蟹
- Octopus 章魚，八爪魚
- Sea urchin 海膽
- Jellyfish 海蜇
- Croakers 石首魚（黃花，青鱸，鰕魚）

**Complete the following questions for EACH restaurant observed:**

於每個受訪餐廳填寫以下問題：

8. **Restaurant Information** (Note: All findings will be kept strictly confidential, i.e. they will not be tied to a particular restaurant's name.)  
餐廳資料（請注意：發佈調查結果時，所有取得的餐廳資料均會嚴格保密。）

<b>Interviewee Name</b> 受訪者姓名	
<b>Restaurant Name</b> 餐廳名稱	
<b>Contact Information</b> 聯絡資料	<b>Email</b> 電子郵件: <b>Phone</b> 聯絡電話:
<b>Address</b> 地址	
<b>When did the restaurant first open?</b> 餐廳什麼時候開始營業？	<b>Year</b> 年份:
<b>What is the ownership structure?</b> 餐廳的所有權和管理結構是什麼？	<input type="checkbox"/> Family-owned 家庭／小資生意 <input type="checkbox"/> Hong Kong-based chain 香港本地連鎖店或集團 <input type="checkbox"/> Foreign chain: If so, which country? 國外連鎖店或集團： _____ <input type="checkbox"/> Other 其他: _____

<b>Type of restaurant</b> 餐廳類型	<input type="checkbox"/> Fast food/take-out 快餐 <input type="checkbox"/> Casual dining 休閒／中價餐飲 <input type="checkbox"/> Fine dining 高級餐廳 <input type="checkbox"/> Other 其他: _____
<b>Type of seafood cuisine</b> 海鮮菜色類型	<input type="checkbox"/> Chinese Cantonese (i.e. Hotpot, dim sum, etc.) 廣東菜 (包括火鍋、點心等) <input type="checkbox"/> Other Chinese (i.e. Szechuan, Shanghai, Beijing, etc.) 其他中國菜 (四川、上海、京菜等) <input type="checkbox"/> Japanese (i.e. Sushi, Shabu-shabu, etc.) 日本菜 (包括壽司、日式火鍋等) <input type="checkbox"/> Other Asian (i.e. Indonesian, Vietnamese, Korean, Thai, etc.) 其他亞洲菜 (包括印尼菜、越南菜、韓國菜、泰國菜等) <input type="checkbox"/> Western (i.e. French, American, Italian, etc.) 西式 (法國菜、美式、意大利菜等) <input type="checkbox"/> Fusion (i.e. Hong Kong style western, etc.) 多國菜 (港式西餐等) <input type="checkbox"/> Other 其他: _____
<b>Type of clientele</b> 顧客類型	<input type="checkbox"/> Families 家庭 <input type="checkbox"/> Business people 商務客戶 <input type="checkbox"/> Foreigners 外國人 <input type="checkbox"/> Young people/students 年輕人／學生 <input type="checkbox"/> Other 其他: _____

### 9. Types of Seafood Sold

#### 售賣海鮮種類

*Note: If available online, menu observations may be completed before visiting the restaurant. However, please verify onsite whether the information previously collected online is correct.*

注：如網上有餐廳菜，可在到訪餐廳前列出菜餚名稱，但請於訪問時驗證網上收集的資料是否正確。

#### **COMPLETE THE FOLLOWING TABLE ONLY FOR DISHES FEATURING THE FOCUS SPECIES:**

只為以重點海鮮品種為材的菜餚填寫下列表格：

\*Indicates prioritized questions

\*號表示重要問題

OBSERVATIONS 觀察		QUESTIONS FOR RESTAURANT OWNERS/MANAGERS 給餐廳業主/經理的問題						
Dish* Include name of fish 菜餚名稱 (標明海鮮名稱)	Price* 價格	For how long has this item been on your menu? 在菜單上多久?	How popular is this item with your customers? 受歡迎程度	From where (which market/type of vendor) do you source this seafood? Does your supplier provide you with information about the origin of the seafood? What kind of information	Have you had any problems sourcing the seafood? Has the availability of this seafood changed over time? 曾試過於採購上有任何問題嗎? 難易度有否改變?	Has the price you pay for this seafood item changed over time? Has the price risen or fallen? Why? 海鮮價格有改變嗎? 為什麼	Are there any product characteristics that you are willing to pay more for? 什麼海鮮特點/性質會值比較高的價錢?	Does consumption of this dish change seasonally? Is consumption related to certain holidays/festivals/events (e.g. weddings)? 消費會隨著季節或節日或活動 (例如婚禮) 改變嗎?

				? (Imported? Where?) 海鮮來源 (市場/供應商) 您的 供應商會提供什麼資 料? 進口的 嗎? 從哪裡 ?		麼?		
		<input type="checkbox"/> For a long time 很久 <input type="checkbox"/> Within the last 5 years 五年以內	<input type="checkbox"/> Not very popular 不受歡迎 <input type="checkbox"/> Average 普通 <input type="checkbox"/> Very popular 很受歡迎					
		<input type="checkbox"/> For a long time 很久 <input type="checkbox"/> Within the last 5 years 五年以內	<input type="checkbox"/> Not very popular 不受歡迎 <input type="checkbox"/> Average 普通 <input type="checkbox"/> Very popular 很受歡迎					
		<input type="checkbox"/> For a long time 很久 <input type="checkbox"/> Within the last 5 years 五年以內	<input type="checkbox"/> Not very popular 不受歡迎 <input type="checkbox"/> Average 普通 <input type="checkbox"/> Very popular 很受歡迎					
		<input type="checkbox"/> For a long time 很久 <input type="checkbox"/> Within the last 5 years 五年以內	<input type="checkbox"/> Not very popular 不受歡迎 <input type="checkbox"/> Average 普通 <input type="checkbox"/> Very popular 很受歡迎					

10. Additional Questions for Restaurant Owners/Managers

給餐廳業主/經理的其他問題

THESE QUESTIONS ARE GENERAL, I.E. APPLY TO ALL DISHES/SPECIES SOLD WITHIN THE RESTAURANT

(with special attention to focus species):

這些問題適用於餐廳內的所有菜餚/食品（但特別對重點品種有興趣）：

\*Indicates prioritized questions

\*號表示重要問題

<p>How have <b>consumer preferences</b> for seafood dishes changed over the past 5 years?*</p> <p>在過去的 5 年，消費者對海鮮菜餚的喜好有何改變？</p> <ul style="list-style-type: none"> <li>• What seafood products are more/less popular now than they were 5 years ago? 有什麼海鮮種類或菜餚比 5 年前更受或不受歡迎？</li> <li>• Which luxury seafood products are more/less popular than they were 5 years ago? 有什麼名貴海鮮種類或菜餚比 5 年前更受或不受歡迎？</li> </ul>	
<p>How has the <b>availability</b> of particular seafood products changed over time?</p> <p>各樣海鮮種類或產品的需求、採購難易度等有怎樣的改變呢？</p> <ul style="list-style-type: none"> <li>• What seafood products have increased/decreased most in price over the past 5 years? 於過去的 5 年，有什麼海鮮種類或產品的價格有所增加或減低？</li> <li>• Which luxury seafood products have increased/decreased most in price of the past 5 years? 於過去的 5 年，有什麼名貴海鮮種類或產品的價格有所增加或減低？</li> </ul>	
<p>What specific characteristics of seafood would increase sales (e.g. Environmental certifications? Origin? Story about the port/fishermen?)? Have your clients' preferences changed over time?*</p> <p>什麼海鮮特點/性質會影響銷量（對環境的影響？產地？關於捕魚過程的故事）？餐廳的顧客會關心海鮮的產地嗎？他們對產地的喜好有改變嗎？</p>	
<p>Do you incorporate information regarding the geographic source, fishing practices, and/or environmental considerations of this seafood on your menus/website/etc. when marketing the seafood? If so, why?*</p> <p>餐廳有把關於海鮮的產地、捕魚方式、對環境的考慮等資料放在菜單或網站作宣傳嗎？為什麼？</p>	
<p>Are there any locations that you would definitely prefer or avoid when purchasing seafood? If so, why?</p> <p>您會優先選擇哪個地方來的海鮮嗎？您會避免從哪個地方來的海鮮嗎？為什麼？</p>	

<p>Would you be open to selling seafood items sourced from Mexico? Would your customers be open to eating seafood sourced from Mexico? Why or why not?          您會考慮售賣來自墨西哥的海鮮嗎？您的顧客對來自墨西哥的海鮮有什麼想法呢？</p>	
<p>What other factors (unrelated to price or quality) affect your purchasing decision (e.g. established relationship with vendor)?          除了價格和質素，哪些因素會影響您購買海鮮的決定（已有來往的供應商）？</p>	
<p>Has the change in the government's food policy (i.e. the frugality campaign) impacted your business? If so, how?          政府有關飲食的政策（包括中國反腐廉政的政策）怎樣影響您的業務呢？</p>	

### Hong Kong Dried Seafood Outlets Observations and Interviews 香港海味的商舖的觀察和訪問

#### Target Outlets:

##### 受訪售賣點

- Identify and describe ten dried seafood outlets, including traditional Chinese medicine stores:  
 找出和描述十個售賣乾貨海味的商舖（包括中醫藥材舖）：
  - Where is the outlet located?  
 這商舖在什麼地區？
  - What is the volume of seafood that passes through each outlet each year (if available)?  
 請估計商舖每年大概售出的海味量
  - How many product types are sold?  
 商舖內有售幾種產品呢？
  - Who are the outlet's target clients (e.g., Restaurants? Individual consumers? Food service? Exporters?)  
 商舖的主要顧客是誰？（例如餐館、個別消費者、餐飲服務業、出口商等）
  - Approximately how many customers visit each the outlet every day?  
 每天大概有多少顧客於商舖內購物？
  - How many other vendors offer the same products at the same market?  
 同一市場內有多少個同類商舖
  - Try to map out product flow  
 嘗試畫出產品的流程

#### Focus Species 重點品種:

##### Top Tier 第一層:

- Swim bladder (multiple species) 花膠，魚鰾
- Shark fin (multiple species) 魚翅
- Geoduck 象拔蚌
- Sea cucumber 海參

##### Second Tier 第二層:

- Swimming crab 花蟹
- Octopus 章魚，八爪魚

- Sea urchin 海膽
- Jellyfish 海蜇
- Croakers 石首魚（黃花，青鱸，鰱魚）

**COMPLETE THE FOLLOWING TABLES FOR EACH STORE OBSERVED:**

為每個受訪商舖填寫下列表格：

**3. Types of Seafood Sold**  
販賣的海味

<p><b>Names of ALL MAJOR SPECIES/PRODUCTS SOLD in this vendor stall:</b> 在此商舖有售的所有主要品種名稱：</p>	
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**COMPLETE THE FOLLOWING TABLE ONLY FOR THE FOCUS SPECIES:**

只針對重點品種填寫以下表格：

\*Indicates prioritized questions

	How is the species listed/named in this store? 列出該商戶對海味品種的名稱	SPECIES 1 品種一	SPECIES 2 品種二	SPECIES 3 品種三	SPECIES 4 品種四	SPECIES 5 品種五
<b>PRICE*</b> 價格	Include units 列出單位	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發	PRICE 價格 : _____ <input type="checkbox"/> Retail 零售 <input type="checkbox"/> Wholesale 批發
<b>QUALITY</b> 質量	Does the product appear clean and whole? 產品的外觀質量（衛生和完整度）	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均	<input type="checkbox"/> Below Average 低於平均 <input type="checkbox"/> Average 平均 <input type="checkbox"/> Above Average 高於平均
<b>PRODUCT PRESENTATION*</b> 產品展示	Describe the product presentation 形容海味的展示方式	<input type="checkbox"/> Dried (pre-packaged) 已包裝乾貨 <input type="checkbox"/> Dried (by weight) 計重量乾貨 <input type="checkbox"/> Canned 罐頭 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Dried (pre-packaged) 已包裝乾貨 <input type="checkbox"/> Dried (by weight) 計重量乾貨 <input type="checkbox"/> Canned 罐頭 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Dried (pre-packaged) 已包裝乾貨 <input type="checkbox"/> Dried (by weight) 計重量乾貨 <input type="checkbox"/> Canned 罐頭 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Dried (pre-packaged) 已包裝乾貨 <input type="checkbox"/> Dried (by weight) 計重量乾貨 <input type="checkbox"/> Canned 罐頭 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Dried (pre-packaged) 已包裝乾貨 <input type="checkbox"/> Dried (by weight) 計重量乾貨 <input type="checkbox"/> Canned 罐頭 <input type="checkbox"/> Other 其他:

	—	—	—	—	—
How is this product consumed? What is it used for?*(Provide rough % if possible) 該海味的用法或食法 (請估計所佔%)	<input type="checkbox"/> Cooking ingredients (non-soup) 煮食 <input type="checkbox"/> Soup ingredients (may have medicinal properties) 湯水 (可能帶藥性) <input type="checkbox"/> Herbal/Chinese medicine ingredients 中草藥 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Cooking ingredients (non-soup) 煮食 <input type="checkbox"/> Soup ingredients (may have medicinal properties) 湯水 (可能帶藥性) <input type="checkbox"/> Herbal/Chinese medicine ingredients 中草藥 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Cooking ingredients (non-soup) 煮食 <input type="checkbox"/> Soup ingredients (may have medicinal properties) 湯水 (可能帶藥性) <input type="checkbox"/> Herbal/Chinese medicine ingredients 中草藥 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Cooking ingredients (non-soup) 煮食 <input type="checkbox"/> Soup ingredients (may have medicinal properties) 湯水 (可能帶藥性) <input type="checkbox"/> Herbal/Chinese medicine ingredients 中草藥 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Cooking ingredients (non-soup) 煮食 <input type="checkbox"/> Soup ingredients (may have medicinal properties) 湯水 (可能帶藥性) <input type="checkbox"/> Herbal/Chinese medicine ingredients 中草藥 <input type="checkbox"/> Other 其他:
Do you process this product in any way in the store? 您會在店內為產品加工嗎?					
Which product presentations are the most popular for this seafood?*(Which presentation is most popular?) 哪個展示類別最受歡迎?					
How do consumers assess quality in this product? What comprises "quality?" (Circle the most important driver if more than one is selected.) 客戶怎樣評估產品的質量呢?	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Smell 氣味 <input type="checkbox"/> Color 顏色 <input type="checkbox"/> Size 大小 <input type="checkbox"/> Source (e.g. country) 產地: <input type="checkbox"/> Other 其他:
What are the competing					

	products? (Include competing products' country of origin.) 該產品的競爭品是什麼?					
<b>DESTINATION</b> 目的地	What types of clients purchase this product? 購買產品的顧客屬於哪個類別?	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:
	Where are the clients located? (Provide rough % if possible) 顧客所在地 (請估計所佔%)	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸 <input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:
<b>SOURCE</b> 貨源	Where do you source this product? 這產品從哪裡來? 您會優先選擇哪裡來的產品? 會避免哪裡來的產品? 為什麼? (價格? 質量?)					
	Do you prefer or avoid any particular country of origin? Why? (Price? Quality?) 您會優先選擇哪裡來的產品? 會避免哪裡來的產品? 為什麼? (價					

	格?質 量?)						
PRICE 價格	What are the most important drivers of price for this product?*(Circle the most important driver if more than one is selected.) 對價格最有影響力的因素	<input type="checkbox"/> Quality 產品 質素 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Quality 產品 質素 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Quality 產品 質素 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Quality 產品 質素 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	<input type="checkbox"/> Quality 產品 質素 <input type="checkbox"/> Abundance at market 產品供應量 <input type="checkbox"/> Time of year 時節 <input type="checkbox"/> Origin 原產地 <input type="checkbox"/> Other 其他:	
	Does the price vary seasonally? If so, why? Provide highest and lowest price if possible. 價格會隨著時節改變嗎?為什麼?可能的話,提供這品種的最高和最低價格。	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有 Highest 最高:  Lowest 最低:	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有 Highest 最高:  Lowest 最低:	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有 Highest 最高:  Lowest 最低:	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有 Highest 最高:  Lowest 最低:	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有 Highest 最高:  Lowest 最低:	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有 Highest 最高:  Lowest 最低:
SUPPLY 供應	Is the product available for sale all year round? 這產品全年有售嗎?	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	
	How does the availability of the product fluctuate? Why does it change? 這產品採購難易度有變化嗎?為什麼	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:	<input type="checkbox"/> Time of greatest availability 最容易 / 最多的時節:  <input type="checkbox"/> Time of least availability 最難 / 最少的時節:
	Have you	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO				

	<p>seen the available <b>volume</b> of this product change over the last 5 years? <i>If so, how?</i> 在過去 5 年，此產品的流量有變化嗎？怎樣的變化？</p>	沒有	沒有	沒有	沒有	沒有
	<p>Have you seen the <b>size</b> of this product change over the last 5 years? <i>If so, how?</i> 在過去 5 年，此產品的大小有變化嗎？怎樣的變化？</p>	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有
<b>DEMAND</b> * 需求	<p>Have you seen the demand for this product change over the last 5 years? * <i>If so, how?</i> 在過去 5 年，此產品的需求有變化嗎？怎樣的變化？</p>	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有	<input type="checkbox"/> YES 有 <input type="checkbox"/> NO 沒有
<b>PROFIT</b> 利潤	<p>If retail, around how much will wholesale prices be for this product (include wholesale minimum volume if possible)? 如果受方商戶是零售商，請估計批發價（列出單位）。</p>					

**4. Additional Questions for Vendors:**  
給賣家的其他問題

**THESE QUESTIONS ARE GENERAL, I.E. APPLY TO ALL SPECIES/PRODUCTS SOLD WITHIN THE STALL:**  
這些問題適用於店內的所有海味品種：

\*Indicates prioritized questions

<b>BUSINESS</b> 業務	Do you own this business? 你是業主／老闆嗎？	<input type="checkbox"/> YES 是 <input type="checkbox"/> NO 不是
	How many people are employed here (estimate)? 有多少人在這裡就業（估計）？	
<b>SOURCING</b> 來源	From how many different sources do you obtain your product(s)? 您有幾個海味貨源？	
	From how many different locations/geographies do you obtain your product(s)? 您的海味產品從多少個地區來？	
	Generally, what changes in <b>prices</b> have you noticed over the past 5 years?*	
	Which luxury seafood products have increased/decreased most in <b>price</b> over the past 5 years? 在過去的 5 年，有 哪種貴價海味在價格上有上升或下降嗎？	
	Generally, what changes in <b>supply</b> have you noticed over the past 5 years?*	
	Which luxury seafood products have increased/decreased most in <b>supply</b> over the past 5 years? 在過去的 5 年， 有哪種貴價海味在供應上有上升或下降嗎？	
	What have been your primary challenges in sourcing your products? How have you met them? 在採購上有哪些主要挑戰？你如何克服這些挑戰？	
What do you think will be the biggest change in supply over the next 5 years? 你認為在貨源上於未來 5 年最大的變化將會是什麼？		
<b>SALES</b> 銷售	What types of clients purchase your products? (Please select all that apply.) 您的主要客戶類型 (請估計所佔%)	<input type="checkbox"/> Individual consumers 個別消費者 <input type="checkbox"/> Restaurants 餐廳 <input type="checkbox"/> Food Service 餐飲服務業 <input type="checkbox"/> Distributors 代理商 <input type="checkbox"/> Other 其他:
	Where are your clients located? (Please select all that apply.)	<input type="checkbox"/> Hong Kong 香港 <input type="checkbox"/> Mainland China 中國大陸

	<p>您的客戶多從哪裡來？ (請估計所佔%)</p>	<input type="checkbox"/> Other Asian countries 其他亞洲國家: <input type="checkbox"/> Other 其他:
	<p>In addition to selling product here, do you sell your product for distribution in other markets/regions? If so, where? 除了在這裡售賣海味產品，您還有在其他市場/地區買賣、轉銷或代理嗎？有的話，在哪裡？</p>	
	<p>Which products are most popular with your customers? Why? What makes it so popular? (e.g. Origin) 哪些產品最受客戶歡迎？為什麼？什麼令這產品受歡迎？(例如產地)</p>	
	<p>How have these tastes changed over the past 5 years? 在過去的5年，客戶的喜好有改變嗎？</p>	
	<p>Which products are most profitable for you? 哪些產品最賺錢？</p>	
	<p>What influence do holidays/festivals/events in Hong Kong have on your prices? Which are the biggest holidays/festivals for seafood sales? 香港的節日或特別日子對海味的售價有什麼影響？哪幾個節日售出最多海味？</p>	
	<p>What do you think will be the biggest change in sales you will see over the next 5 years? 你認為在銷售上於未來5年最大的變化將會是什麼？</p>	

Appendix F: Additional Hong Kong Photographs

FMO Aberdeen Wholesale Wet Market



FMO Aberdeen Neighborhood Wet Market

Hong Kong Dried



Seafood



Outlets



## Hong Kong Supermarkets







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