

An assessment of South African dried abalone *Haliotis midae* consumption and trade in Hong Kong

Wilson Lau





TRAFFIC REPORT

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Wilson Lau



Dried abalone on sale in Hong Kong © Markus Burgener/TRAFFIC



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South African abalone *Haliotis midae* © Derek Keats / [Wikimedia](#)

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ABBREVIATIONS AND ACRONYMS

AFCD	Agriculture, Fisheries and Conservation Department, Hong Kong
Cap.....	Chapter number of Hong Kong Ordinances (Legislation)
Catty.....	Unit of measurement; one catty equals 0.61 kilogramme
CEPA	Hong Kong–China Closer Economic and Partnership Arrangement
CITES.....	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of the Parties
C&ED.....	Customs and Excise Department, Hong Kong
C&SD	Census and Statistics Department, Hong Kong
DAFF.....	Department of Agriculture, Forestry and Fisheries, South Africa
DEA	Department of Environmental Affairs, South Africa
FEHD	Food and Environmental Hygiene Department, Hong Kong
<i>H. midae</i>	<i>Haliotis midae</i> , abalone species endemic to South Africa
Head per catty.....	Abalone pieces per catty

Hong Kong Hong Kong Special Administrative Region
of the People’s Republic of China

Kippin abalone..... Specific type of processing method where abalone
is hung on a string to dry; equivalent to Yoshihama abalone

INTERPOL..... International Police Organization

Macau..... Macau Special Administrative Region
of the People’s Republic of China

Mainland China People’s Republic of China

NESOI..... Not Elsewhere Specified or Indicated

NRCS..... National Regulator for Compulsory Specifications,
South Africa

UNODC..... United Nations Office on Drugs and Crime

SARS..... South Africa Revenue Services
(administers Customs and Excise services)

Tael Unit of measurement; one tael equals 0.0378 kilograms
(the more useful conversion is 1 catty equals 16 taels)

USA United States of America

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Haliotis midae

South African Abalone

A precious delicacy for special occasions, especially treasured in Cantonese cuisine.

~90% of all dried abalone from Africa is imported by Hong Kong and is all believed to be *H. midae*



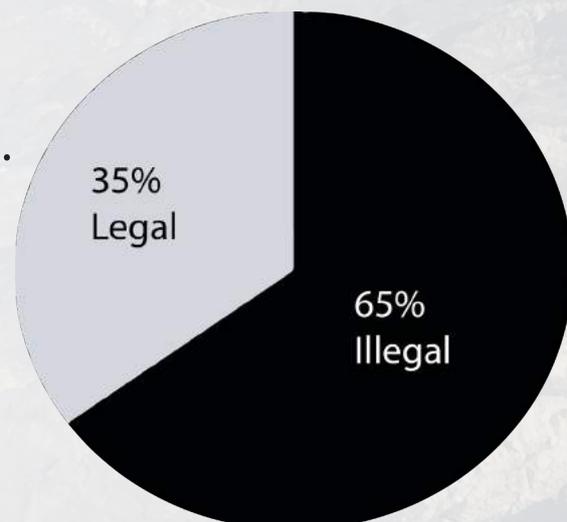
Between 2000–2007, **74%** of dried *H. midae* was imported to Hong Kong from South Africa.

This dropped to **39%** between 2008–2015 as new restrictions were put in place.

Exports of *H. midae* from other African countries have increased, highlighting the extent of illegal trade.

In 2015, **~65%** of all dried *H. midae* exports were illegally sourced and trafficked.

- **33%** was legal aquaculture
- **2%** was legally caught



Surveys of:

153

Hong Kong consumers

88

Dried seafood outlets in Hong Kong

17

Hong Kong restaurants and hotel chains

6

E-commerce websites



9 recommendations for tackling the illegal trade of South African abalone

90% of Hong Kong consumers surveyed had eaten abalone at least once in the past year

~80% of dried seafood importers surveyed in Hong Kong are aware of unlawful behaviour in the abalone trade

46% of abalone consumers surveyed were aware of abalone poaching in South Africa

EXECUTIVE SUMMARY

Haliotis midae is the only commercially viable species of abalone in South Africa, where it is a highly prized trade commodity. However, this trade has been imperilled by poaching and illegal trade in recent decades, and has been a considerable concern to the South African Government given the sheer scale of stock depletion. Despite attempts in South Africa to regulate the abalone trade, and some success in confiscating poached abalone and arresting poachers and traffickers, the smuggling of illegally-sourced abalone has continued unabated.

The rapid rise in affluence in Asia over the past few decades has led to a corresponding increase in consumer appetite for dried seafood products such as imported abalone, long considered a luxury item. Asia-led demand in particular has driven up prices for abalone, creating an unparalleled opportunity in South Africa to profit through the abalone trade. Consequently it has attracted a variety of people and businesses into the sector, including the involvement of small-scale fishers, but also organised criminal syndicates undertaking illegal operations to poach and smuggle abalone to markets in Asia. Advances in communications, transportation and logistics networks has also created an easy means to reach suppliers and traders across continents, bridging the vast distances but also inadvertently facilitating the flow of illegally-sourced abalone.

Hong Kong is the largest global importer of abalone from South Africa, especially of dried abalone, which is a concern for the city as poached abalone tends to be smuggled out of Africa in dried form. Abalone is considered a marine delicacy in Chinese culture, and is a popular item in celebratory banquet menus for family gatherings and festivals. Hong Kong is also an important regional trade hub for imported products, and the redistribution of imported abalone is no exception. In spite of the large volumes of abalone that are imported into Hong Kong, there are virtually no regulatory controls on the abalone trade and no laws preventing abalone poached in South Africa from being sold locally. Even where Hong Kong authorities are aware that abalone imported into Hong Kong was sourced from illegal fishing operations, it can be legally traded in Hong Kong, where the importer has complied with the required import procedures. This greatly limits the ability of Hong Kong authorities to play a role in addressing the poaching and illegal trade in abalone.

Past studies have examined the issues of poaching and trafficking of abalone in South Africa, but the fate of poached abalone once it arrives in Hong Kong is not well understood. This report addresses this critical gap in knowledge, presents an assessment of the trade in South African dried abalone in Hong Kong, and considers possible interventions at various points along the trade chain to stem the illicit trade in poached abalone. Surveys of retail outlets were conducted in Sheung Wan, a hub for dried seafood outlets, as well as selected districts in other parts of Hong Kong and Macau. Wholesale and retail traders were also interviewed at these outlets at every opportunity. An online consumer survey was carried out to assess the perception of consumers towards abalone and their awareness of illegally sourced abalone available in Hong Kong. In addition, trade data on import and re-export of abalone, in particular dried abalone, were analysed to examine the scale of local abalone consumption in Hong Kong, and the extent to which the city acts as a trade hub for the international abalone trade.

South Africa is the leading trading partner for dried abalone imports to Hong Kong (33% of imports in 2012–2015), but a range of other African countries were also important dried abalone trading partners (36% of imports in 2012–2015). Abalone imported from African countries other than South Africa that do not have commercial abalone fisheries are all believed to be imports of *H. midae* originating from South Africa. In contrast, a mere 2% of Hong Kong's total dried abalone re-exports are comprised of *H. midae*. This would suggest either considerable under-reporting of *H. midae* re-exports, or a high rate of local consumption of *H. midae* in Hong Kong.



Dried abalone in Hong Kong market
© Wilson Lau / TRAFFIC

2012–2015:

33%

of dried abalone imports to
Hong Kong came from South Africa

36%

of *H. midae* imports came from other
African countries

2%

of Hong Kong's total dried abalone
re-exports are from South Africa

Political and economic factors have influenced the trade in dried *H. midae* in Hong Kong. One of the more frequently cited causes of a recent downturn in trade was the anti-graft campaign, which was initiated in mainland China in 2012, causing much self-imposed austerity by high-ranking Chinese Government officials. This led to a purported reduction in spending on luxury products and extravagant banquets where abalone and shark fins are typically served, which may have been related to the dip in dried *H. midae* imports in 2012. The 2011 tsunami and nuclear disaster in Japan had created a shortage in Japanese dried abalone, leading to a reduction in imports from Japan and a temporary increase in prices between 2011 and 2012. These effects were short lived, with import levels of Japanese dried abalone returning to pre-2011 levels by 2013. The closure of South African wildlife abalone fisheries in 2008 and 2009 also had a drastic impact on where dried *H. midae* were exported from. In 2007, prior to the fisheries closure, Hong Kong had sourced 86% of all dried *H. midae* imports from South Africa, but by 2008, this dropped to 29%, with the rest being imported from countries such as Zimbabwe and Mozambique. The rapid shift in source countries might suggest that pre-existing networks from other African countries to Hong Kong had long been established. High levels of *H. midae* imports from other African countries have been sustained since 2008.

The report's consumer survey provides insight into the preferences of Hong Kong consumers for abalone, and importantly, explains a strong preference for South African abalone based on its high ratings on quality and price. A third factor, namely its availability (and therefore ease of purchase) in the market, translates not only to more people having tried South African abalone previously, but also its significant market share in the Hong Kong market. Conversely, if availability of South African abalone were to change, which is a possibility given the challenge of sustaining current levels of production given the already heavily depleted wild stocks, then South African abalone's dominant position in the Hong Kong market could falter, and in so doing, alter consumer preferences for South Africa sourced abalone.

Awareness of illegality in the abalone trade was predictably lower further down the supply chain. While the majority of abalone traders surveyed were aware of some form of illegal activity, fewer consumers had heard of illegal taking of abalone from the wild in South Africa (only 19% of respondents were firmly aware) and illegally-sourced abalone available for sale in Hong Kong (15% firmly aware). Some traders characterised the illegal aspects of the South African abalone trade as local coastal communities being involved in poaching, while others specified that there was a Chinese presence and involvement of criminal syndicates in the trade. This generally fits with existing knowledge about the nature of South Africa's abalone poaching in published literature. Also divulged through market surveys were various deceptive practices by local traders in Hong Kong to doctor abalone products (changing its shape and appearance) in order to mislead consumers, which if evidence of this were found, could be a violation of Hong Kong's recently updated trade practices law.

“Hong Kong is the largest global importer of abalone from South Africa, especially of dried abalone, which is a concern for the city as poached South African abalone tends to be smuggled out of the country in dried form.”

Past interventions have not been effective in stemming the illegal abalone trade in South Africa. The 2008 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix III listing of *H. midae* by South Africa failed due to administrative delays which created chaos and costly stock losses for South African abalone producers and traders. However, these issues could be overcome if the necessary preparations were taken to administer the flow of documentation at South Africa's borders, and if key consumer countries and territories, such as Hong Kong, were directly engaged in the process. Furthermore, limiting the trade restrictions to dried abalone only, as part of a future CITES Appendix III listing, could be sufficient to counter the smuggling of poached abalone, which is usually exported in dried form, and could be less affected by administrative delays since there is less of a risk of product expiry.

Other countries, such as the EU, require health certificates from importers as a documented guarantee on all food imports, which ensures that inspections of food manufacturing processes in the source country meet certain food safety requirements. Since health certificates are usually issued to legally operating premises, it could be another intervention point where border control authorities could distinguish between legal and illegal abalone consignments. Hong Kong does not have a mandatory requirement for health certificates in place for food items other than for regulated food items, of which seafood are not included. Food importers in Hong Kong are merely encouraged to obtain a health certificate for all unregulated food items, which suggests it could be quite likely that much of the abalone imported to Hong Kong occurs without the guarantees that would otherwise be associated with health certification.

RECOMMENDATIONS

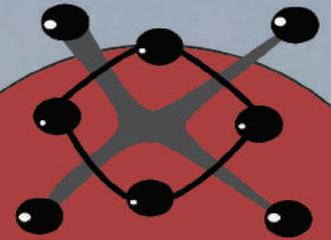
The report recommends the following measures to tackle the trade in illegally-sourced abalone:



Support for a CITES listing of *H. midae*



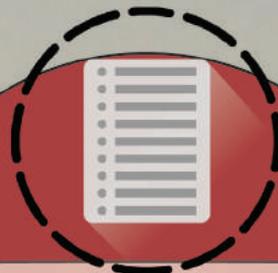
Financial investigations and joint operations between South Africa & Hong Kong



Fostering access to legally-derived abalone through a network of trusted suppliers



Improve traceability of imported abalone through health certificates



Protection that goes beyond CITES through “list of species of conservation concern”



Monitoring and enforcement against abalone manipulation practices, with greater forensic capacity



Raising awareness about issues in dried abalone trade through consumer campaigns



Address trade data discrepancies by ensuring accurate trade reporting



Research into abalone trade in mainland China and Viet Nam

RECOMMENDATIONS

The report recommends the following measures to tackle the trade in illegally-sourced abalone:

No.	Intervention	Key Partners
1	South Africa should notify the CITES Secretariat of the inclusion of <i>H. midae</i> within Appendix III of the Convention, with an annotation that the listing only applies to the species in dried form, and/or; Consideration by CITES Parties to include the species within Appendix II through the submission of a proposal to amend Appendix II of the Convention. Inclusion within the CITES appendices will require close co-operation between South Africa, Hong Kong and other abalone importing countries/territories to ensure a comprehensive implementation process.	DEA, AFCD, CITES Secretariat
2	Build on previous co-operation between Hong Kong and South African law enforcement authorities on seizing illegally-sourced abalone, through encouraging further collaborations that make use of specialised investigative approaches to track illicit financial flows arising from illegal abalone trade.	DAFF, SARS Customs division; C&ED, INTERPOL, UNODC
3	Build up a network of trusted suppliers to enhance verification and traceability of legally-sourced abalone, and develop a stakeholder's forum with the aim of linking producers and traders in source and consumer countries to strengthen legally-derived abalone supply chains.	DAFF, NGOs, Hong Kong dried abalone industry, business associations
4	Hong Kong Customs and health authorities should provide support if efforts by South Africa to require health certificates for the export of dried abalone were implemented, and affirm that such certificates will be accepted in Hong Kong if it were to come into force. Hong Kong should also consider in the long term a health certification requirement for all imported seafood as a compulsory condition of import.	NRCS, DAFF, C&ED, FEHD
5	The Hong Kong SAR Government should develop a universal "list of species of conservation concern" for Hong Kong, which brings together threatened and endangered species of relevance to the city, and includes non-native species threatened through trade and consumption in Hong Kong. This list could then be used as a basis for updating schedule lists of laws governing wildlife protection in Hong Kong.	AFCD, NGOs, academics
6	Hong Kong's law enforcement authorities are encouraged to implement greater monitoring of dried seafood outlets, and to make use of forensics analysis to facilitate testing for possible fraudulent products so that deceptive practices related to the sale of high value seafood products, including dried abalone, is stamped out amongst the city's dried seafood outlets.	C&ED, Hong Kong Government Laboratory, academics
7	Alert consumers through targeted awareness campaigns about issues in the abalone trade (as a threat to wild abalone species) and benefits of abalone from farm hatcheries. Stakeholders in the abalone trade should also be engaged if health certificates could become a tool to affirm the safety of abalone products in consumer-directed advertising.	C&ED, Hong Kong dried abalone industry, business associations, NGOs
8	Hong Kong needs to work with its trading partners to encourage accurate reporting by importers and exporters, and to ensure that improved mechanisms are in place to improve the ability of border authorities to uncover deceptive practices on consignment declarations.	C&SD, C&ED, SARS
9	Future research should focus on mainland China and Viet Nam, as emerging drivers of the global abalone trade.	NGOs, Customs and statistics collection authorities in China and Viet Nam

北京
安宮牛黃丸



South African abalone packaged as a gift in Hong Kong market © Wilson Lau/TRAFFIC

1. INTRODUCTION

The insatiable demand for high value seafood items, such as abalone, in East Asian countries is driving resource depletion in source countries, far from the consumer's bowl. One important example of this is *Haliotis midae*, an abalone species endemic to South Africa. Heavy demand for abalone amongst East Asian countries, especially in its dried form, has persisted against a backdrop of increasingly depleted stocks in South Africa (DAFF, 2014), leading to concerns that every abalone harvest season could be its last (Plagányi *et al.*, 2011). The sustainability of the abalone trade is challenged by the species' biology: *H. midae* is a slow moving grazing mollusc that occupies inshore waters, growing to sexual maturity after seven years (de Greef and Raemaekers, 2015). The relative ease of access to its habitat, slow growth and late reproductive potential makes abalone especially vulnerable to over-exploitation. Lobsters are, furthermore, increasingly encroaching on abalone habitats off South Africa's southwestern coast, resulting in the predation of juvenile abalone and contributing to the declining trend in abalone densities in these areas (Raemaekers *et al.*, 2011). Persistent economic growth in East Asia has spawned a growing market for abalone products, resulting in high global prices and triggering opportunities for many small-scale fishers to derive earnings well above other local industries, in spite of government established allowable catch limits restricting annual harvest volumes (Raemaekers *et al.*, 2011). Furthermore, the involvement of organised criminal syndicates in the smuggling of poached abalone out of South Africa has been known for years (Gastrow, 2001), with connecting trade networks that include South Africa's neighbouring countries for the processing and export of poached abalone. The complexity of the illegal trade in dried *H. midae* has limited the effectiveness of past policy and enforcement measures in the country, and there is a growing realization that further efforts are unlikely to succeed without the co-operation of enforcement and other interventions in abalone consumer countries (Bürgener, 2010).

“Uncovering the nature of trade flows in Hong Kong is critical for determining the appropriate supportive mechanisms required to halt the poaching and illegal trade at the source.”

H. midae was initially listed by South Africa in Appendix III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 2008, in an effort to put a stop to illegal abalone exports. The species was removed from Appendix III in 2010. One of the main factors that led to the implementation failure of the CITES listing of *H. midae* was the lack of proactive engagement with consumer countries by the South African Government (Bürgener, 2010). Recognizing this, the current report focuses on Hong Kong as a key trading and consumer market for the dried South African abalone trade and the critical demand-side factors that influence the trade, while considering possible interventions at the market end to help stem the trade in illegally-sourced abalone.

The report builds on a previous Wildlife Trafficking Response and Priority Setting (Wildlife TRAPS) Project report, entitled *South Africa's Illicit Abalone Trade: An Updated Overview and Knowledge Gap Analysis*, which assessed the extent of abalone poaching in the Western Cape of South Africa, while uncovering the modus operandi of poaching communities and other actors in the illicit trade chain (De Greef and Raemaekers, 2014). The current report serves as a natural and necessary extension, expanding on the previous study by building an understanding about the illegal flows of

H. midae once it arrives in consumer markets. The first port of call for South Africa's dried abalone is typically the port city of Hong Kong, its largest importer globally (Bürgener, 2016). Uncovering the nature of trade flows in Hong Kong, the regulatory framework governing the dried abalone trade and discerning knowledge around illegal or laundering activities, is critical for determining the appropriate supportive mechanisms required to halt the poaching and illegal trade at the source.



Live *H. midae* in Cape Town © Peter Southwood/Wikimedia

Dried abalone is considered one of four marine precious delicacies in Chinese culture, along with shark fins, sea cucumber and fish maw

Haliotis midae South African Abalone

- Species endemic to South Africa
- Slow moving, grazing mollusc that occupies inshore waters
- Easily accessible habitat, slow growth, and late reproductive potential make abalone especially vulnerable to over-exploitation

The abalone trade has predominantly been studied in terms of South African dynamics and impacts, covering socio-economic impacts, organised crime, and transnational trade relations (Gastrow, 2001; Willock *et al.*, 2004; Steinburg, 2005; Raemaekers *et al.*, 2011; De Greef and Raemaekers, 2014; Bürgener, 2016). While much is known about the sourcing and trafficking side of the trade chain, the fate of poached abalone once it arrives in consumer countries is not as well understood. Past analyses of Hong Kong's trade data have provided insight into the scale and composition of the legal dried abalone trade (Clarke, 2002; Clarke, 2004; To *et al.*, 2006), and examined the popularity of various brands, origins, size and price ranges of dried abalone available in Hong Kong. However, there has been less focus in these past studies on the illegal aspects of the dried abalone trade. This report addresses this important gap in knowledge, gathering market-side information about the scale and composition of the trade, trade and consumer practices, and critically, capturing the awareness of traders about illegality in the trade. Such information could enhance understanding of the nature of demand for dried abalone in Hong Kong, possible complicities along the illegal abalone trade chain, and help identify interventions to stem the flow of illegally-sourced abalone.

Findings from these previous studies offered important baseline information, however the scope of the research for the current report with these previous studies does differ. Clarke (2002) examined dried abalone and three other dried seafood products, observing 69 shops and interviewing 23 traders to gather information about the practices of traders and the primary concerns about their business. Meanwhile, To *et al.* (2006) surveyed over 40 shops along Des Voeux Road West, placing particular emphasis on identifying the market characteristics and consumption preferences for

various brands of dried abalone. This study is focused on the trade of South African dried abalone, and thus is narrower in species scope, but more comprehensive in its assessment of the perceptions of traders and consumers, and their awareness of illegally-sourced abalone. In addition to surveying traders in the Western District, as Clarke (2002) and To *et al.* (2006) had done, the current research expanded this to traders in other districts in Hong Kong.

“This study is focused on the trade of South African dried abalone, and thus is narrower in species scope, but more comprehensive in its assessment of the perceptions of traders and consumers, and their awareness of illegally-sourced abalone.”

Section two of this report further discusses Hong Kong’s current and historic trade advantages that have led it to become a major trade hub for dried abalone in Asia. Section three outlines the research objectives, while section four provides details on the sources and types of trade data used in this analysis, and of the methodology for conducting surveys of dried seafood outlets and Hong Kong consumers. The report’s findings are presented in the following three sections. Section five outlines the analytical results of Hong Kong import and re-export abalone data. Section six summarises insights gained from surveys of dried seafood outlets about perceptions, price and knowledge about illegality in the dried abalone trade. In section seven, the availability of dried abalone through online channels is assessed. Section eight presents findings from an online consumer survey concerning perceptions and experience with abalone consumption and awareness about various aspects of the abalone trade. In section nine, the pattern of abalone demand and supply, the prevalence of *H. midae* in the Hong Kong abalone market and awareness of its illegal sourcing, and effectiveness of past interventions are discussed. Section ten draws conclusions from the research, and suggest recommendations on regulating the trade in vulnerable species such as abalone in Hong Kong, reduce demand for illegally-sourced wildlife products, and increase enforcement collaborations between South Africa and Hong Kong.



Dried abalone in Hong Kong market © Wilson Lau/TRAFFIC

2. BACKGROUND

2.1. Decline in abalone production and escalation of poaching activities in South Africa

As an indication of recent declines in South Africa abalone production, South Africa was landing around 2,800 tonnes of abalone annually at its peak in 1965 (Raemaekers *et al.*, 2011), but by 2007 the total allowable catch had reduced to 75 tonnes, just prior to the closing of the fisheries in October 2007 (Plagányi *et al.*, 2011). The decision to close the abalone fisheries was taken by the South African Government amid serious concerns about the impact of continued high levels of illegal harvest on remaining abalone resources (Raemaekers *et al.*, 2011). The fishery was reopened in 2010 due to a backlash from commercial fishers who claimed closing the fisheries had a minimal effect on illegal fishing and potentially encouraged such practices. Licensed commercial fishers also claimed to have been unfairly alienated through this process (Hauck, 2009).

Persistent export demand for South African abalone has in part been met by abalone farms, which can be cultured on land and in the sea, in tanks and structures or planted artificially in naturally occurring habitats (Gordon and Cook, 2004). Abalone farm production has grown from ~430 tonnes in 2002, the year it began to outpace legally caught abalone, to ~1,700 tonnes in 2015, dwarfing legal wild caught abalone of 96 tonnes during the same year (Bürgener, 2016).

“Over the past 20 years, there has been an escalation of illegal catch, which is the harvest of abalone that exceeds the allocated quotas and/or abalone caught without the required permit.”

Over the past 20 years, there has been an escalation of illegal catch, which is the harvest of abalone that exceeds the allocated quotas and/or abalone caught without the required permit. The amount of poached abalone in 2015 was estimated to be roughly ~2,989 tonnes, the highest figure since 2004 and greater than legal production from the aquaculture sector (1,488 tonnes) and the wild capture fishery (96 tonnes) (Bürgener, 2016). The majority of South African abalone, whether legally or illegally sourced, and from both wild capture and aquaculture operations is imported by Hong Kong (Cook, 2014; Bürgener, 2016).

2.2. The role of Hong Kong in the trade of *H. midae*

Hong Kong residents are evidently some of the biggest consumers of marine wildlife, having the second highest per capita seafood consumption in Asia, and eighth largest globally, at 65.5 kg of seafood per person per year (FAO, 2016). The coastal part of southern China, where Hong Kong is situated, has a long history of sourcing food from the sea compared with the north, which had once viewed the oceans as inhospitable (Höllmann, 2013). Herring, scallops, oysters, and numerous different varieties of seafood are caught, and through the centuries, methods of preservation have been developed, curing and drying products to defer consumption and to make it transportable (Höllmann, 2013).

Local species of abalone has been consumed by people along the coast of China for thousands of years. Historical records suggest it has been used in cooking as far back as the Zhou Dynasty (1122 to 256 BC) and Han Dynasty (206 BC to 220 AD) as a popular ingredient in the Emperor’s court (Clarke, 2002; To *et al.*, 2006). Abalone consumption has garnered a respectability and prestige that is reserved for a few select food products in Chinese culture today. Dried abalone is considered one of four “marine precious delicacies,” along with shark fins, sea cucumber and fish maw (Tsoi, 2007). Part of its elevated status

in Chinese culture is the perception of abalone as an important health tonic in traditional Chinese medicine, touted for its ability to cleanse the liver, boost the immune system and brighten and heal the eyes (Newman, 2002). It has been suggested, however, that the actual choice of abalone may be more often associated with a sense of prestige, social status and a symbol of success, than for its health benefits (To *et al.*, 2006; Cheung and Chang, 2011).

Growth in Hong Kong's consumption in seafood products, including abalone, has occurred in step with increased economic prosperity in the 1970s and 1980s, and similar patterns of growth have been evident in mainland China during its economic rise in the late 1990s and early 2000s (Clarke, 2004; Cheung and Chang, 2011). However, for abalone, while there may be regulatory controls in place and enforcement efforts in source countries, there are few restrictions to the trade of abalone in Hong Kong. Local enforcement of the abalone trade largely focuses on ensuring fair trading practices. Hong Kong's wildlife laws seek to protect endangered species under threat, but only to the extent that they are native to the territory, or listed in the CITES Appendices. *H. midae* does not meet either of these conditions, but is nevertheless a species made vulnerable through trade (see section 9.5.1.). Once poached abalone has been imported into Hong Kong it can be openly traded and sold in the markets as equivalent to its legal counterpart (De Greef and Raemaekers, 2014). The previous CITES listing of *H. midae* was an attempt by South Africa to engage other countries to assist in regulating the international trade of the species, but it was subsequently delisted due to challenges with implementation in South Africa and a lack of co-ordination with consumer countries (see section 9.5.1.). For now, Hong Kong authorities simply do not have the mandate to treat poached abalone as illegal within the territory.

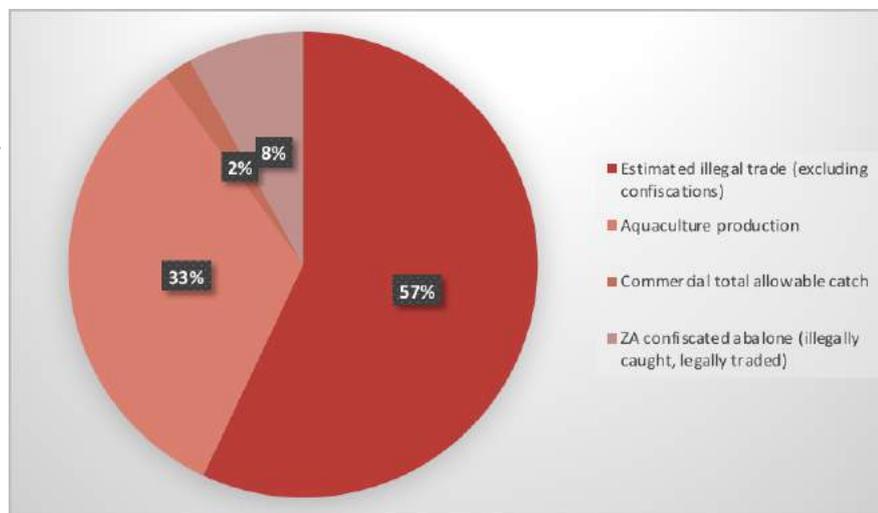
2.3. Hong Kong's grey market economy

Hong Kong is an important trade hub for a multitude of commodities (Trade and Industry Department, 2016), including dried abalone and other seafood products (Clarke, 2004). Several market characteristics make it extremely attractive to trade with Hong Kong, even if goods are intended for the wider mainland China market. Hong Kong is a free trade port and enjoys preferential trade arrangements with mainland China under the Hong Kong–China Closer Economic and Partnership Arrangement (CEPA). This enables most goods to be imported from the rest of the world to Hong Kong without tariffs being imposed. This tax-free status continues to apply if the goods are re-exported into mainland China, particularly through Shenzhen's free trade ports.

Efficient port infrastructure and Customs procedures, compared to the mainland, also makes Hong Kong a preferred stopping point for China-based traders, even though numerous ports in mainland China are transitioning into free trade zones. For seafood imports, the well-established business connections that Hong Kong trading companies have developed with suppliers abroad also makes it easier for local marine products businesses to access goods via these trading companies (Fabinyi, 2015).

In part due to these tariff advantages, a grey market economy has emerged. The grey trade is so-called as it involves the import of goods to Hong Kong, before they are transported to mainland China using methods that avoid tax payments (Fabinyi, 2015). Although Hong Kong's free port status allows goods to be

***H. midae* abalone sources to world market, 2015**



Source: Bürgener, 2016

imported legally without the imposition of tariffs, certain re-export routes to mainland China may amount to smuggling and/or an evasion of taxes on the China side (Wu and Sadovy de Mitcheson, 2016).

2.4. The dried seafood trade in Hong Kong

Hong Kong was for centuries inhabited by fishing communities (Welsh, 1994), but intense urbanization and the influx of immigrants led to a shift away from primary to secondary industries such as manufacturing, and was later dominated by services industries (Trade and Industry Department, 2016). While fishing practices have diminished, the trade and processing of high-value seafood products in Hong Kong have been sustained (notably the trade in abalone, shark fins, sea cucumber, and fish maws, amongst others). Hong Kong was renowned, for example, for its processing of shark fins, which usually provides the greatest value add to the entire trade chain, which might explain the sustained level of trade in shark fins through the city (Cheung and Chang, 2011). One of the key reasons for this is the long established links that Hong Kong trading companies and sales agents have with producers in the source countries. These trading companies are likely to have built up trusting relationships with local partners, possess the capability to manage local fishers and have a grasp of the political environment; factors that are difficult to replicate (Fabinyi, 2015). Hong Kong's wholesalers and retailers are likely to rely on existing trading companies for sourcing products and refrain from sourcing directly from suppliers in the source country.

“Hong Kong imports abalone in a number of different forms—live, frozen, dried and canned. However, evidence of the illegal trade of South African abalone suggests that it is primarily traded in its dried form”

Due in part to differences in sourcing connections that individual traders may have, Hong Kong traders are not often exclusively an importer, wholesaler or retailer, but often combinations of these (Clarke, 2002). The same trader that imports dried abalone from South Africa and distributes it to a local trader, might source their stock of Japanese dried abalone from another importer in Hong Kong. There is also some degree of vertical integration, whereby these traders operate a retail shop on the ground floor, but also trade on a wholesale basis with other retailers and restaurants that buy in bulk. These blurred roles are facilitated by Hong Kong's free port policy, which makes it easy to import seafood products into the territory (Fabinyi, 2015).

Hong Kong imports abalone in a number of different forms—live, frozen, dried and canned. However, evidence of the illegal trade of South African abalone suggests that it is primarily traded in its dried form, in part due to conveniences with storage for long periods without refrigeration, and the ease with which it could be consolidated and exported in large batches since abalone shrinks by up to a tenth of its original mass after drying (Steinberg, 2005; De Greef and Raemaekers, 2014). Dried abalone apparently smells less pungent than fresh and frozen abalone, and as such is often masqueraded as other products to avoid detection (De Greef and Raemaekers, 2014). Confiscations of poached abalone in South Africa, and raids on illegal processing facilities, suggest that criminal syndicates favour dried abalone for smuggling (De Greef and Raemaekers, 2014). For these reasons, any examination of the illegal abalone trade from South Africa, including the current report, should for now be focused on trade in its dried form.



H. midae fossil © James St. John/Flickr

3. RESEARCH OBJECTIVES

A better understanding of the illegal flows of dried *H. midae* in Hong Kong, and of the actors in the trade chain, could help to find opportunities for change and to develop suitable interventions to tackle the trade in illegally-sourced abalone. The current report seeks to achieve these aims by addressing the following research questions:

What are the key drivers of demand for dried *H. midae* in Hong Kong?

What has been the pattern of demand and supply of dried *H. midae* in Hong Kong?

What factors determine consumers' choice for dried *H. midae* compared with other dried abalone species/brands?

To what extent is the illegal sourcing of dried *H. midae* in Hong Kong known by traders and consumers?

Are fraudulent activities concerning the sale of abalone to consumers prevalent amongst traders and food providers?

What local and international interventions are appropriate and effective in stemming the illegal abalone trade?

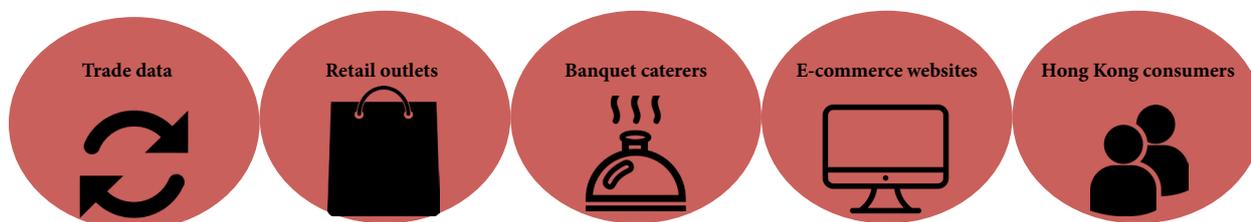
To what extent have past trade-related interventions been effective? What are the key lessons from these past efforts?



Dried seafood in Hong Kong market © Wilson Lau/TRAFFIC

4. METHODOLOGY

An assessment of Hong Kong dried abalone trade was carried out in July 2016 to August 2017, and included an analysis of trade data, as well as surveys of retail outlets, banquet caterers, e-commerce websites, and Hong Kong consumers.



The research also included an interview with a South African manufacturer and exporter of *H. midae*, discussions with Hong Kong Government authorities for additional information and clarification, as well as research from available literature.



Hong Kong trade data for abalone (*Haliotis* spp.) was sourced from the Hong Kong Census and Statistics Department, for the period 2000–2015, inclusive. Hong Kong import data are likely to present a more accurate picture of abalone trade levels compared to export data from African countries, as there are fewer incentives for Hong Kong’s abalone importers to falsify data or under-report on trade declarations. Firstly, even if an abalone consignment was illegally harvested in the first place, it may still be lawfully imported as long as the proper import declarations are made. Secondly, abalone can be imported tariff-free under the city’s free port policy. The time period provides a long-term context for assessing the impact of policy initiatives that may have altered trade flows of abalone to Hong Kong.

Although the main interest of this report is dried abalone¹, data for live², frozen³ and prepared and preserved⁴ abalone were also gathered to compare the trends in particular forms of abalone. Data on both imports and re-exports were gathered, as well as data on the source countries for abalone re-exported from Hong Kong to destination countries. The latter provided some insight into Hong Kong’s role as a redistribution hub for the global dried abalone trade.

Data were sorted by trading country, e.g. the import of dried abalone in the year 2000 included a list of the top 10 abalone source countries that traded with Hong Kong. Trade mass (in weight) and value (in HKD and USD) were provided, based on declared amounts by importers and exporters in Hong Kong.

In analysing the data, particular focus was placed on imports from African countries (includes South Africa and other African countries). De Greef and Raemaekers (2014) had previously noted that a growing volume of dried abalone imports to Hong Kong were declared as being derived from African countries other than South Africa (herewith referred to as “other Africa”). As *H. midae* is the

¹ Codes used by the Hong Kong Census and Statistics Department for dried abalone, under the harmonised system (HS), were: 03079920 (2000–2011), 03078990 (2012–2015)

² For live abalone, the HS codes used were 03079110 (2000–2004), 03079120 (2005–2011), 03078110 (2012–2015)

³ For frozen abalone, the HS codes used were 03079910 (2000–2011), 03078910 (2012–2015)

⁴ For prepared and preserved abalone, the HS codes used were 16059010 (2000–2011), 16055700 (2012–2015)

only commercially viable abalone species in the southern Africa region⁵, it has been suggested that aggregating imports from South Africa and other African countries may be a more accurate measure of international trade in *H. midae*.



A few retail shops specializing in dried seafood also exist on adjoining streets, such as Eastern Street, and were included in this survey.

Many of the retail outlets are also dried seafood wholesalers, loading goods into trucks in the mornings, while remaining open throughout the day for household consumers. Other wholesalers and importers operate out of units in the high-rise buildings in this area, often without a shopfront on the street level. Wholesalers in this area are likely to sell in bulk to restaurants and dried seafood outlets in other districts in Hong Kong, and re-export to clients overseas.

Dried seafood outlets in the Yau Tsim Mong district are predominantly retail. Unlike Sheung Wan, dried seafood outlets in this district are less concentrated in one area, but are spread throughout the district. Foot traffic in this district tends to be high, and many of the retail offerings, including dried seafood outlets, cater to the tourist trade.

Dried seafood outlets were also visited in other areas, although on an ad-hoc basis. This included outlets in Shum Shui Po and Tai Po, which are largely residential areas and would presumably have household consumers as the primary clientele. Limited price data and sourcing information from Macau⁶ were also collected as a comparison to prices in Hong Kong.

A covert survey method was used whereby the researcher posed as an interested buyer of dried abalone. This method was chosen due to potential sensitivities that dried seafood traders may have towards non-governmental organizations, a legacy from campaigns against the shark fin trade. Photos were taken wherever possible and with permission granted.

Traders in the retail outlets surveyed were asked questions in order to gauge their perception and awareness of the market for dried abalone. Questions included, though were not limited to, the following:

- Product range, including abalone and other dried seafood products;
- Most popular/common items for sale;
- Types of abalone and their characteristics;
- Indicators of quality (both good and poor quality);
- Storage, preparation and cooking methods;
- Awareness of poached abalone, and how to tell the difference;
- Trends in sales/demand, including consumer types and purpose of buying;
- Inventory of dried abalone prices;
- Supply chain; and
- Awareness of regulations concerning the trade in dried abalone.

⁵ The only exception is Namibia, which has the only known abalone farm outside of South Africa, and no commercial-scale fisheries. As of mid-2009, the abalone farm in Namibia produced around 20 tonnes of *H. midae* per annum (Bürgener, 2016).

⁶ Macau Special Administrative Region of the People's Republic of China, herewith referred to as Macau, is a popular tourist destination for Hong Kong and mainland Chinese tourists.

Due to the covert nature of the survey, not all questions were asked to every trader encountered. Questions covered depended partly on the availability of dried South African abalone at the outlet, and the willingness of the trader to share information. This was particularly so around sensitive questions about poached abalone. At a minimum, where dried South African abalone was on offer, the display price and size of the abalone product were recorded. Other information was merely observed and noted (i.e. not counted) by the researcher, such as the product range available at the outlet, e.g. other dried seafood products; other forms of abalone on offer (e.g. canned abalone); storage method (e.g. in glass jar, open display or kept in freezer), and dried abalone from countries of origin other than South Africa, although some price data were collected for comparison.

Some tact was needed when asking about traders' awareness of poached abalone. This was usually achieved by either asking about their general awareness and understanding of "fakes" in the market and how to identify them, or if "other African" abalone was available. To *et al.* (2006) identified a brand of abalone, namely "fei zhou bao", which translates from Cantonese as "African abalone". According to traders surveyed in To *et al.* (2016), products labelled as "African abalone" apparently came from African countries other than South Africa, thus suggesting a type of dried abalone distinct from the South Africa species. While several species of abalone exist in Africa, only *H. midae* is commercially viable—in terms of marketable sizes and production levels, according to past studies that examined African sources of abalone (Bürgener, 2010; De Greef and Raemaekers, 2014). Therefore it is very likely that abalone that is derived from African countries other than South Africa may have been *H. midae* that was smuggled from South Africa to the exporting African country. By inquiring about African abalone from countries other than South Africa, the researcher was in fact asking about the availability of poached South African abalone.



Banquet sales and management staff from several hotels and restaurant chains in Hong Kong were surveyed at a Wedding Fair in August 2016. The Fair targets couples and serves as a one-stop-shop for all wedding needs, including the sale of jewellery, packages for wedding photography, honeymoon celebrants, as well as banquet catering for the wedding reception. The hotels and restaurant chains present at the Fair provided a good opportunity to survey banquet caterers rapidly, instead of contacting them individually via other survey methods, e.g. contact by phone.

Seventeen hotels and restaurant chains were surveyed. Some of these hotels and restaurants operate as chains, or part of a conglomerate where a uniform catering policy applies. This survey was not intended to be exhaustive, and there are obvious biases toward hotels and restaurants that are specifically targeting wedding couples, which do not necessarily represent the broad range of banquet catering options, particularly ones that offer banquets for other celebratory purposes, such as major festivals or birthday dinners that may include abalone on their menu. Due to time constraints, the current survey did not involve surveys of other hotel and restaurant chains beyond the Wedding Fair.

A covert surveying method was used, similar to surveys completed at dried seafood outlets. The researcher posed as a potential buyer, i.e. one half of a couple planning a wedding, with notes taken

with a mobile phone or Dictaphone. Survey questions to banquet sales and management staff included whether abalone was part of the set menus, the type⁷, size and country of origin of abalone dish on offer, wild or farmed sources, and the form of abalone used, e.g. live, frozen, canned, dried. Depending on their answers to these questions, their awareness of poached abalone in the market was probed.



Surveys were conducted in August 2017 of mainland China's e-commerce websites to assess the availability of South African dried abalone for sale through these channels. A survey of mainland Chinese e-commerce websites could also help to evaluate whether online channels are a prominent way for Hong Kong traders to advertise and sell their dried abalone products.

Five China-based e-commerce websites were selected. These websites offered a broad range of products for sale to the business and consumer markets. In contrast, initial screening of specialist websites that offered marine products for sale found them to hold very few dried abalone products, and thus they were not included in survey. Only one Hong Kong-based e-commerce website was included in the survey. A number of other e-commerce websites that are based in Hong Kong and targeting consumers in the city were screened, but none had dried abalone for sale.

Searches were conducted on advertisements for "dried abalone" and "South African dried abalone", and to a limited extent on other forms of abalone, such as "canned abalone", for comparative purposes. Only advertisements that clearly indicated abalone products for sale, through images provided and product descriptions, were counted. Other qualities of the product, including the abalone type, e.g. kippin abalone, size and price were recorded when such information was given. The location of the seller/company was also noted, where available.

Although it is useful to examine the availability of poached South African dried abalone online, this was not assessed as part of the online surveys. Poached abalone is not specifically prohibited outside of South Africa, despite its illegal origins, so it might seem logical for such products to be available online, with the extra layer of anonymity afforded by such sales channels. There are considerable challenges, however, in identifying poached abalone products, given the demands in visually identifying products from images posted online. In many instances, the product images provided may in fact be samples that differ from the actual product on offer. Although other indicators of poached abalone could be assessed from written product descriptions, such as country of origin, whether from farmed or wild sources, price offered, the seller's background, etc., the provenance and legality of advertisements for South African dried abalone offered for sale on e-commerce websites, cannot be easily assessed, and might only be properly established through further investigations and assessment by law enforcement authorities. Hence the availability of poached abalone is not addressed through online surveys for this report.

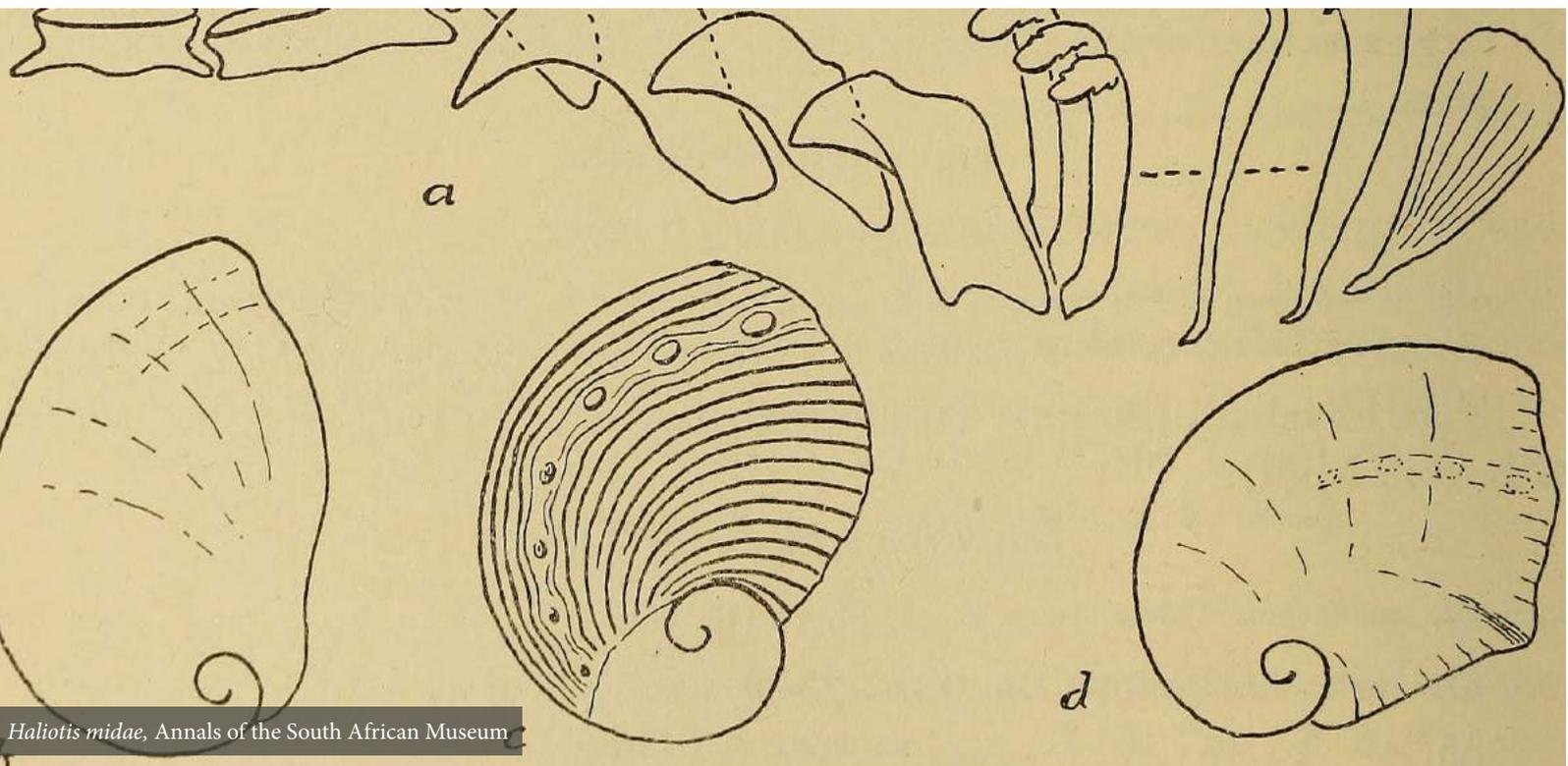
⁷ Abalone "types" or brands refer to additional product delineations used by Hong Kong traders, such as the method of drying. See Section 6.1.



The perception of Hong Kong consumers about abalone, their awareness of poached abalone in the local market and their consumption behaviour were assessed through an online survey. A questionnaire was developed on Google Forms, an online surveying software, and was distributed using a snowball method during October—November 2016.

Questions on the consumer survey sought to gain an understanding of consumers' experience, preference and awareness about abalone (see appendix 1 for the full questionnaire). The survey implicitly assumes that people in Hong Kong would have eaten abalone at some point, and questions were asked regarding their experience with consuming abalone in its various forms, and from various countries. Survey results of those who had consumed dried abalone were segmented for selective analysis. The survey questions covered the following topics:

- Frequency and purpose of consuming abalone;
- Preference between abalone types, and wild-caught versus farmed;
- Perceptions of quality and value for money;
- Awareness of threats and endangered status of some abalone species;
- Awareness of poached abalone being sold in Hong Kong;
- Concern about the environment; and
- Demographic information.



Haliotis midae, Annals of the South African Museum



4.1. Trade data



TRADE DATA ANALYSIS



5. TRADE DATA ANALYSIS

Although the focus of this report is on dried abalone, it was important to examine the overall trends in abalone trade, and assess what that might show about shifting patterns of demand and possibly drivers of the abalone trade. This could provide indications as to the kind of interventions that have been effective, or otherwise, in influencing market changes. Therefore, the following analysis of trade data, sourced from Hong Kong’s Census and Statistics Department, initially assesses the import and re-export of abalone in all traded forms and for all countries trading with Hong Kong, before exploring specific trade trends by different forms of abalone. The analysis then focuses specifically on dried abalone, including trends in imports of dried abalone from South Africa and other African countries, as well as the major re-export destinations for all dried abalone from Hong Kong.

5.1. Abalone trade in Hong Kong

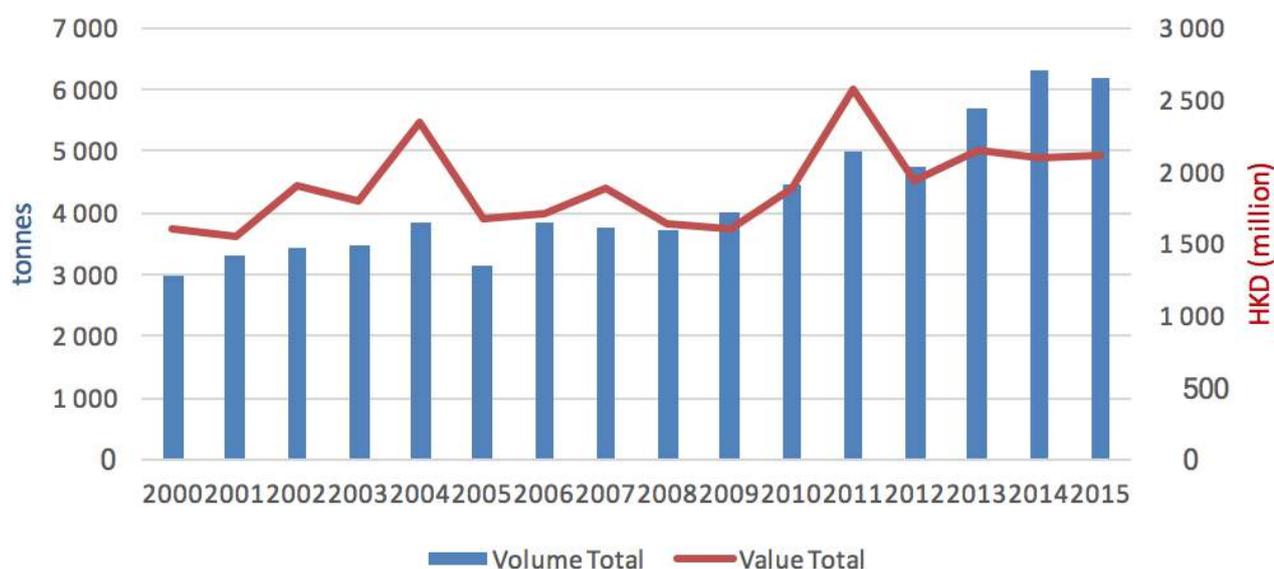
Hong Kong imports of abalone have progressively increased over the period 2000 to 2015, with imports more than doubling in weight from 2000 (3,000 tonnes) to 2015 (6,170 tonnes), having reached a peak in 2014 (6,295 tonnes). The economic value of the trade has also increased with abalone imports valued at almost HKD1.6 billion (USD206 million) in 2000, climbing to over HKD2.1 billion (USD273 million) in 2015.

“Hong Kong imports of abalone have progressively increased from 2000 to 2015, with imports more than doubling in weight from 2000 (3,000 tonnes) to 2015 (6,170 tonnes).”

Two aspects in the estimated value of Hong Kong’s abalone imports are particularly noteworthy. First, Figure 1 shows two noticeable spikes in the estimated value of abalone imports for the years 2004 and 2011, with both occasions witnessing an increased value of ~HKD500 million (~USD70 million) (2004) and ~HKD660 million (~USD90 million) (2011) more than the year before.

Figure 1: Total abalone imports to Hong Kong, by weight (tonnes) and value (HKD million), 2000–2015.

Source: Hong Kong Census and Statistics Department.



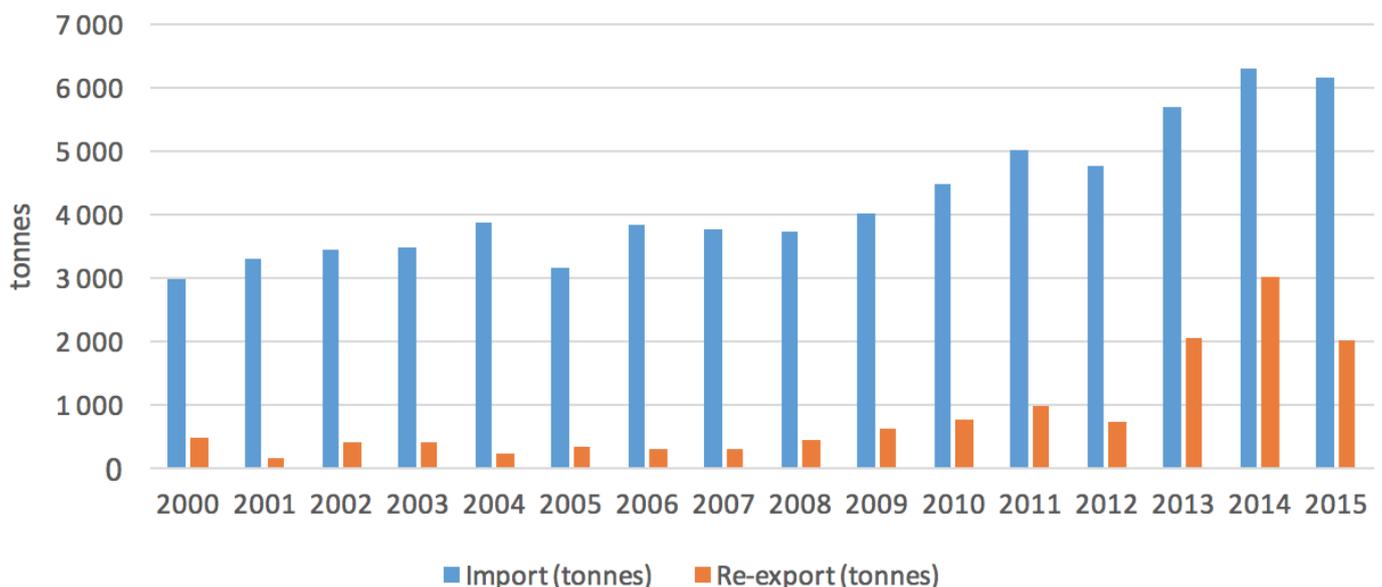
Second, as a billion dollar (HKD) industry, the trade in abalone is highly lucrative, however the HKD/tonne value of abalone in trade appears to have decreased over time. Between 2000 and 2005, the estimated average value of abalone was ~HKD536,000/tonne (~USD69,000/tonne). However, by the period 2006–2010, the average value had reduced to ~HKD440,000/tonne (~USD57,000/tonne), and further declined to ~HKD395,000/tonne (~USD51,000/tonne) during the period 2011–2015.

Abalone re-exports from Hong Kong have increased around fourfold in weight from 2000 (466 tonnes) to 2015 (2,004 tonnes). Roughly 20% of all imported abalone over this period was re-exported, although the proportion of abalone re-exported has grown in recent years, particularly from 2009 onwards. Abalone re-exports remained below 1,000 tonnes between the years 2000–2012, with an average of 472 tonnes re-exported per year, (12% of all abalone imports during this period). Trends in abalone re-exports rose significantly during 2013–2015, with an average of 2,358 tonnes per year re-exported from Hong Kong, (39% of imports).

“Abalone re-exports from Hong Kong have increased around fourfold in weight from 2000 (466 tonnes) to 2015 (2,004 tonnes). Roughly 20% of all imported abalone over this period was re-exported.”

The increase in re-export levels (by weight) also corresponded with a significant jump in trade value overall. The average value of re-exports was ~HKD118 million (~USD15 million) per year during the period 2000–2012. As re-export levels (by weight) increased during 2013–2015, so too did its overall value, with an average ~HKD493 million (~USD64 million) per year. Re-exports were at their peak in 2014, with a weight of 3,029 tonnes and value of ~HKD614 million (~USD79 million). Despite peak overall weight and value of trade in abalone during 2013–2015, actual value by weight had declined somewhat. During 2000–2012, the abalone trade was valued at an average of ~HKD268,000 per tonne (~USD35,000/tonne), but had declined to ~HKD210,000 per tonne (~USD27,000/tonne) in the 2013–2015 period.

Figure 2: Total abalone imports and re-exports in Hong Kong, by weight (tonnes), 2000–2015. Source: Hong Kong Census and Statistics Department.



5.1.1 Abalone imports by form

Abalone is either imported live, dried, frozen, or in prepared and preserved form (canned, shrink wrapped, or other packaged forms). Of the four main forms of abalone, the greatest quantity of abalone is imported in prepared and preserved form, with an average of 1,666 tonnes imported annually during the period 2000–2015. This compares with imports of live abalone, with an average of 1,217 tonnes annually, and frozen abalone with 1,031 tonnes per year. There are comparatively fewer imports of dried abalone, by weight, with 331 tonnes per year on average.

In recent years, imports of abalone in all forms have increased compared to previous periods. The greatest rise in imports can be witnessed in prepared and preserved abalone, reaching an average of 2,149 tonnes in the period 2011–2015, from 1,644 tonnes on average in 2006–2010. An even greater proportional increase can be seen in the frozen abalone trade, with 1,750 tonnes imported on average during 2011–2015, up from 65 tonnes during 2006–2010. For live and dried abalone, there were only slight increases in the average quantity imported, with live abalone increasing from 1,338 tonnes during 2006–2010 to 1,353 tonnes in 2011–2015, while the quantity of dried abalone imported grew marginally from 311 tonnes to 337 tonnes for the same comparative periods.

In order to assess the proportion of each form of abalone imported into Hong Kong relative to the whole mass, the traded mass (tonnes) figures were converted to whole mass (tonnes), according to the FAO's conversion factors (FAO, 2000, cited in Bush *et al.*, 2013)⁸. As Figure 3 shows, prepared and preserved abalone dominates the trade, comprising an average 37% of all abalone imported into Hong Kong, in whole mass. In trade mass, dried abalone made up only 8% of total abalone imports, on average, during 2000–2015. Once converted to whole mass however, dried abalone made up 30% of the total. In contrast, imports of live abalone comprised 29% of the total trade, on average, based on traded mass but its proportion of the trade is reduced to 11% on average if whole mass is considered.

⁸ Conversion factors of 0.41 for frozen abalone and prepared and preserved abalone; 0.1 for dried abalone (FAO, 2000, cited in Bush *et al.*, 2013).



Canned abalone © Markus Bürgener/TRAFFIC



Dried abalone © Wilson Lau/TRAFFIC



Live abalone © TWINSCAR1115M/Wikimedia

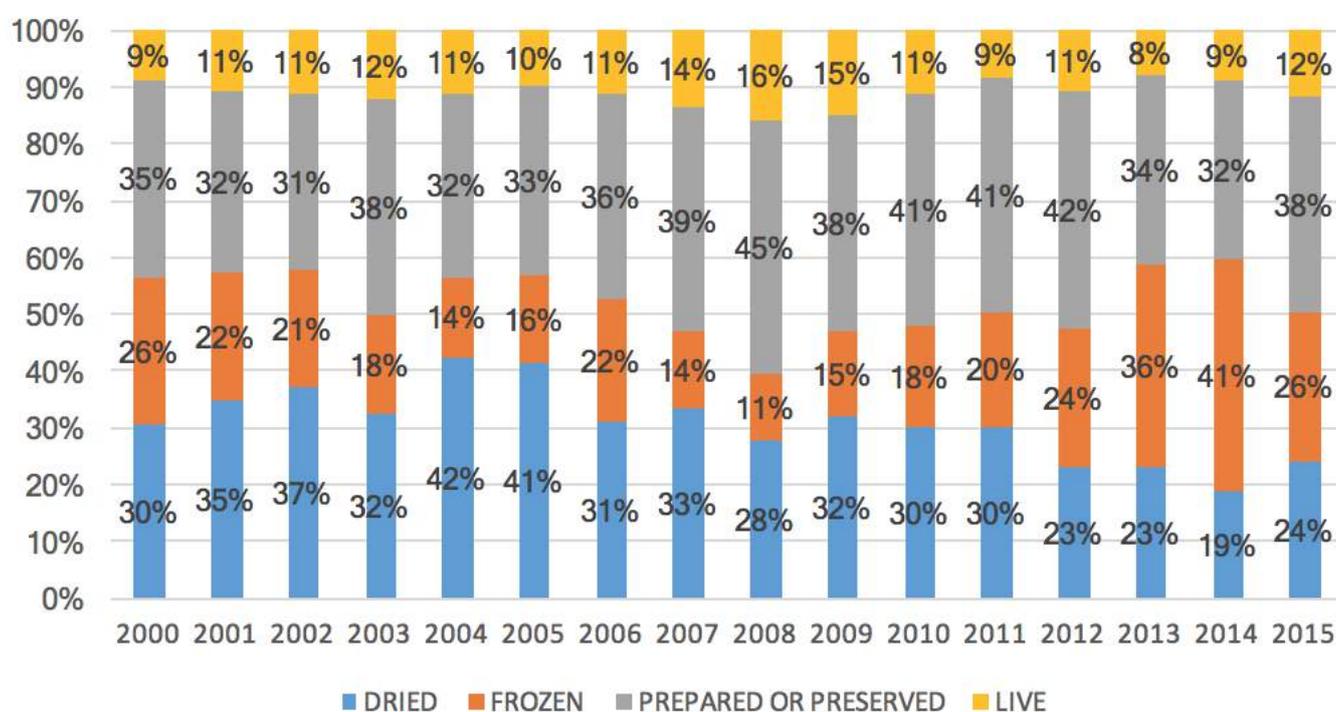


Frozen abalone/placesandfoods.com

Dried abalone is a much greater per unit value than other forms of abalone. Between 2000 and 2015, the declared import value of dried abalone was HKD1.9 million per tonne (~USD244,000/tonne) on average annually, reaching a peak of ~HKD2.8 million per tonne (~USD355,000/tonne) in 2011. This is likely due to a lower trade mass, as abalone loses approximately 90% of its weight when it is dried, making it possible to transport a greater number of abalone per tonne. The processing of dried abalone is also believed to enhance the flavour, and enables abalone traders to levy a higher retail price than other forms of abalone. In contrast, live (~HKD194,000/tonne or ~USD25,000/tonne), frozen (~HKD302,000/tonne or USD39,000/tonne) and prepared or preserved (~HKD381,000/tonne or USD49,000/tonne) abalone imported into Hong Kong has a much lower annual average HKD per tonne value.

Figure 3: Percentage of imports to Hong Kong by form of abalone, converted to whole mass, 2000–2015.

Source: Hong Kong Census and Statistics Department

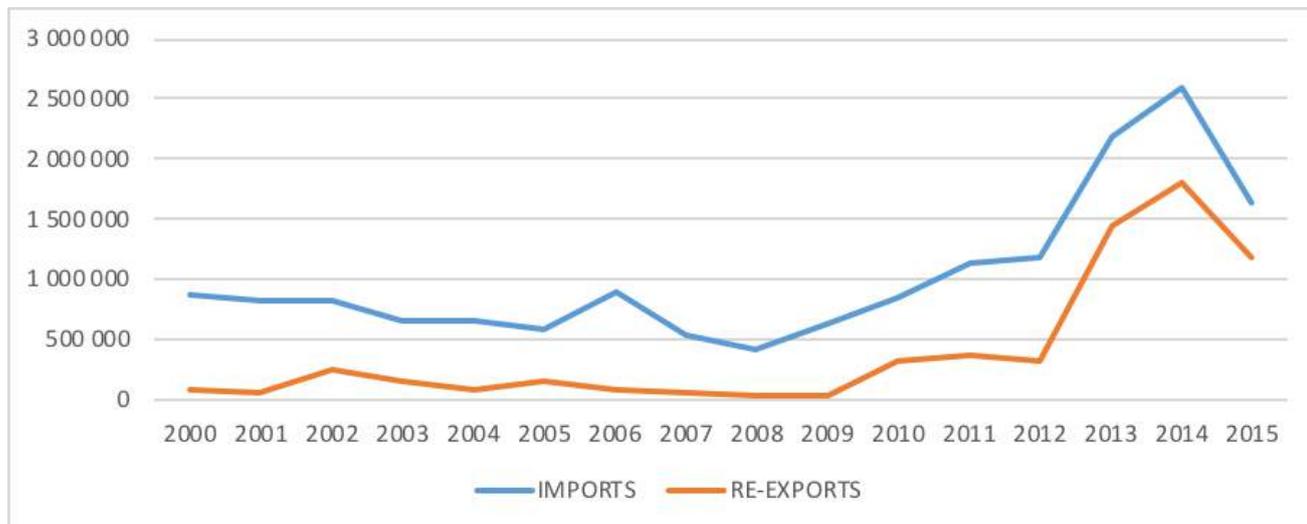


5.1.2. Abalone re-exports by form

Abalone is predominantly re-exported in frozen form, with an average of 398 tonnes re-exported per year (between 2000 and 2015). This is followed by prepared and preserved abalone, where an average 228 tonnes per year is re-exported, 121 tonnes of live abalone per year, and 78 tonnes of dried abalone per year.

Re-exports of frozen abalone have increased over the 2000–2015 period. Re-exports were relatively stable between 2000 and 2012, averaging ~150 tonnes of frozen abalone re-exports per year. This average jumped to ~1,474 tonnes per year during 2013–2015. As Figure 4 shows, the overall trend for the import and re-export of frozen abalone appear to oscillate according to re-export demand, with local consumption (subtracting re-exports from imports) at an average ~633 tonnes during the period 2000–2015. The intensification of frozen abalone re-exports during the period 2013–2015 is also reflected in the proportion of imported frozen abalone that is re-exported. While the re-export of frozen abalone was 28% of imports on average between 2000 and 2015, during the 2013–2015 period, the proportion of re-exports from imports of frozen abalone increased to 69%.

Figure 4: Imports and Re-exports of frozen abalone, by weight (kg), 2000–2015. Source: Hong Kong Census and Statistics Department.



The re-export of dried abalone also had a pronounced increase in recent years. During 2000–2012, the average weight of re-exports was ~59 tonnes, amounting to approximately 19% of dried abalone imports. Re-exports then rose to an average of ~167 tonnes per year for 2013–2015, which amounts to approximately half of all dried abalone imports subsequently being re-exported.

The re-export of prepared and preserved abalone also rose during the period 2000–2015, although at a smaller scale than the re-export of frozen and dried abalone. Average re-exports of prepared and preserved abalone annually were ~228 tonnes, which was on average 12% of prepared and preserved abalone imports in Hong Kong.

The re-export of live abalone fluctuated between the years 2000 and 2015, with an average of ~121 tonnes re-exported annually, which amounted to 10% of live abalone imports.

5.2. Dried abalone: imports

5.2.1. Major source countries

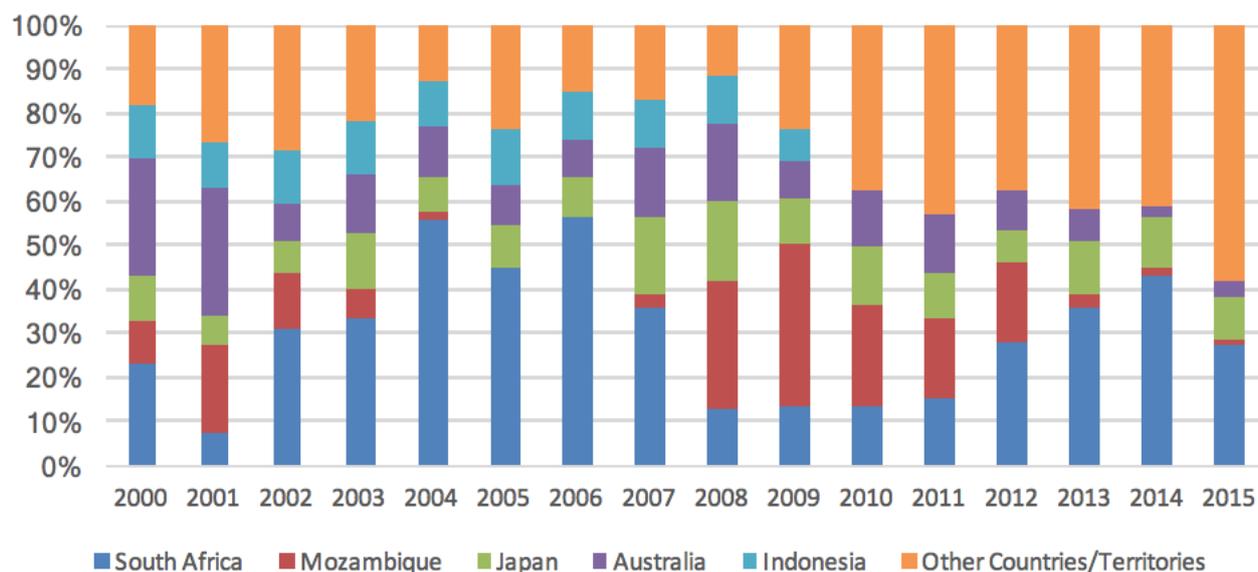
Overall imports of dried abalone to Hong Kong ranged between ~250 tonnes to ~470 tonnes annually during the years 2000–2015. Much of the imports of dried abalone are dominated by a handful of source countries. During the period 2000–2010, ~80% of the imports were sourced from five countries: South Africa, Australia, Mozambique, Japan and Indonesia. However, between 2011 to 2015, the contribution from these five countries had reduced to 57% of total imports of dried abalone, with Indonesia ceasing to export dried abalone to Hong Kong entirely, and a number of other countries had begun exporting abalone to Hong Kong, notably Oman, Namibia, Zimbabwe and Zambia.

“South Africa was the largest source of dried abalone imports to Hong Kong by far, with ~1,600 tonnes imported during 2000 to 2015.”

South Africa was the largest source of dried abalone imports to Hong Kong by far, with ~1,600 tonnes imported during 2000 to 2015, with the next biggest source of dried abalone being Australia,

from which ~630 tonnes were imported over this period. As Figure 5 shows, South Africa was the largest source country for dried abalone to Hong Kong in 10 out of the last 16 years, dominating in two distinct periods—during 2002–2007 (average 43% of total dried abalone imports) and 2012–2015 (average 34% of total dried abalone imports). Mozambique, which was the top source country in four consecutive years during 2008 to 2011, had a comparatively erratic trend in the level of dried abalone imported over the full time period assessed. No dried abalone was imported to Hong Kong from Mozambique in 2005 and 2006, and ~10 tonnes or less were imported in the most recent three years assessed (2013–2015).

Figure 5: Top 5 source countries for Hong Kong’s imports of dried abalone, percentage of total, 2000–2015. Source: Hong Kong Census and Statistics Department, Custom code: 03078990 – Abalone (*Haliotis spp.*), dried, salted or in brine, including those smoked.



5.2.2. Imports from African countries

A more accurate measure of the trade in *H. midae* is to analyse the aggregate imports from South Africa and other African countries to Hong Kong. While *H. midae* originates from South Africa, poached *H. midae* is frequently smuggled out of South Africa to other African countries, before being exported to Hong Kong (De Greef and Raemaekers, 2014). Consequently, declarations made by Hong Kong importers include the trade in abalone from other African countries (other than South Africa), none of which have commercial abalone fisheries⁹, and are thus all believed to be imports of *H. midae* (Bürgener, 2016).

Indeed, trade records show a large portion of dried abalone imports were apparently sourced from a range of other African countries (Figure 6). Since 2002, consistently more than 100 tonnes per year of dried abalone were imported from South Africa and other African countries combined to Hong Kong. Imports also reached over 200 tonnes per year in the most recent years (2013–2015), as well as in 2004. Imports from all African countries amount to roughly 40–60% of overall dried abalone imports to Hong Kong, for the years between 2002 and 2011. From 2012 onwards, the proportion of imports from all African countries soared to over 60%, reaching a high of 76% in 2014.

The year 2004 was a record in terms of the quantity of dried abalone derived from African countries (South Africa and other Africa) to Hong Kong. Some 273 tonnes of dried abalone were imported

⁹ Note that there is legal *H. midae* production on an abalone farm in Namibia, but as with other African countries (other than South Africa), there is no known commercially viable *H. midae* fisheries (see footnote 5)

from African countries, out of a total of 475 tonnes (58%), which was also the greatest quantity of imports recorded between 2000 and 2015. The majority of the dried abalone from African countries in that year came from South Africa, with 264 tonnes, or 96% of the total from Africa (Figure 7).

South Africa was the only African source country that Hong Kong imported dried abalone from in all years between 2000 and 2015. Mozambique was a major source country during the years 2000–2003, and the period 2008–2012, but traded much lower amounts (~10 tonnes or less per year) during other years. Namibia was a source country for dried abalone imports to Hong Kong in nine of the 16 years between 2000 and 2015, ranging between ~5 and ~25 tonnes traded in most years, until trade quantities increased in 2014 (~40 tonnes) and 2015 (~86 tonnes). Hong Kong trade records also show abalone imports being sourced from Zimbabwe and Zambia. Before 2010, abalone imports from Zimbabwe to Hong Kong only occurred in 2003 (~11 tonnes) and 2006 (0.6 tonnes), but after 2010, exports rose rapidly, peaking at 57 tonnes in 2011 and declining steadily since, exporting ~11 tonnes in 2015. As exports reduced in Zimbabwe, Zambia became a sudden import source country for dried abalone to Hong Kong in 2013 (43 tonnes), when it had not done in any previous years, reaching a high of 56 tonnes in 2015.

The quantity of dried abalone imports from South Africa compared with other African countries fluctuated widely between 2000 and 2015. These variations do not occur at random, but a distinct shift in the proportion of dried abalone imports from South Africa to Hong Kong can be observed between 2007 and 2008. Figure 8 shows that during the period 2000–2007, the majority (more than 60%) of dried abalone from Africa to Hong Kong came from South Africa, with the exception of 2001. Imports of dried abalone from South Africa to Hong Kong peaked between 2004 and 2007, where 86–97% of dried abalone from Africa came from South Africa. This trend was however reversed during 2008–2015, where South Africa consistently made up less than 60% of total dried abalone imports from Africa to Hong Kong.

“South Africa was the only African source country that Hong Kong imported dried abalone from in all years between 2000 and 2015.”

Figure 6: Proportion of annual dried abalone imports to Hong Kong from African countries and all other countries/territories, by weight (kg), 2000–2015. Source: Hong Kong Census and Statistics Department, Custom code: 03078990 – Abalone (*Haliotis spp.*), dried, salted or in brine, including those smoked. (*Haliotis spp.*), dried, salted or in brine, including those smoked. Note: “African Countries” comprises imports from South Africa, Mozambique, Zimbabwe, Namibia, Zambia, Swaziland, Democratic Republic of Congo, and Kenya.

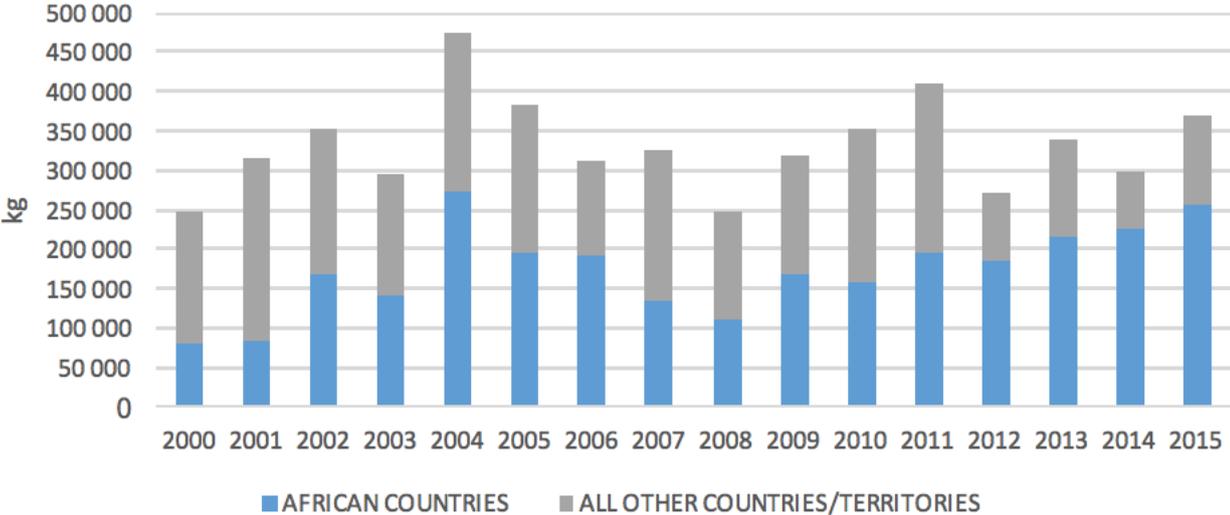


Figure 7: Import of dried abalone from African countries (South Africa and other African countries) to Hong Kong, by weight (kg), 2000–2015. Source: Hong Kong Census and Statistics Department, Custom code: 03078990 – Abalone (*Haliotis spp.*), dried, salted or in brine, including those smoked.

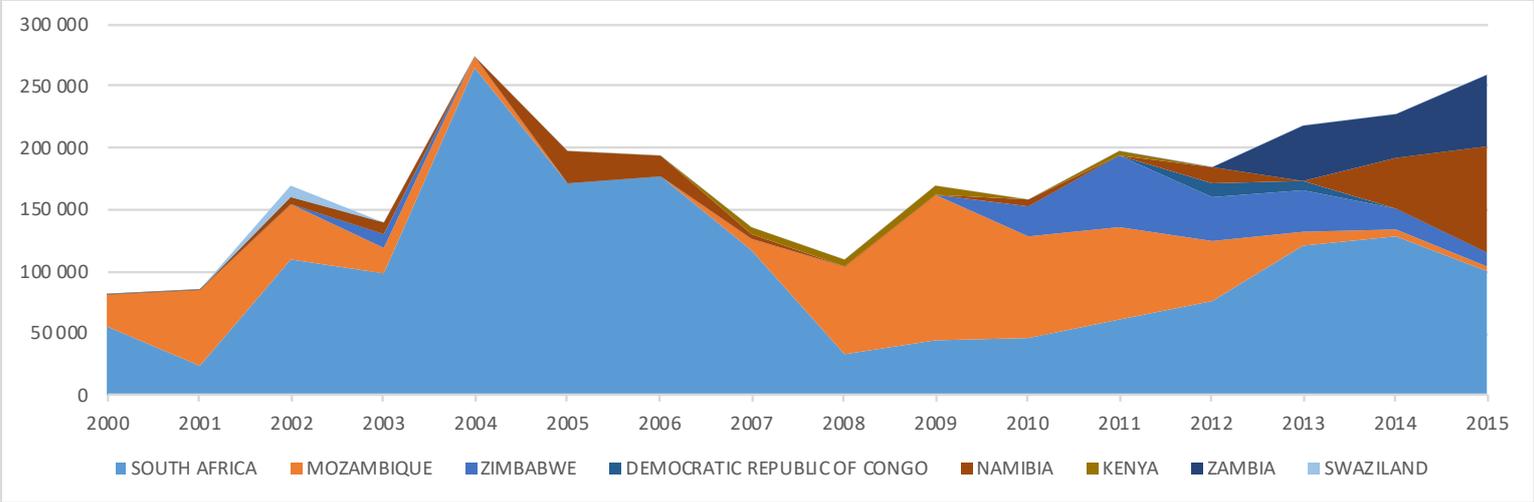
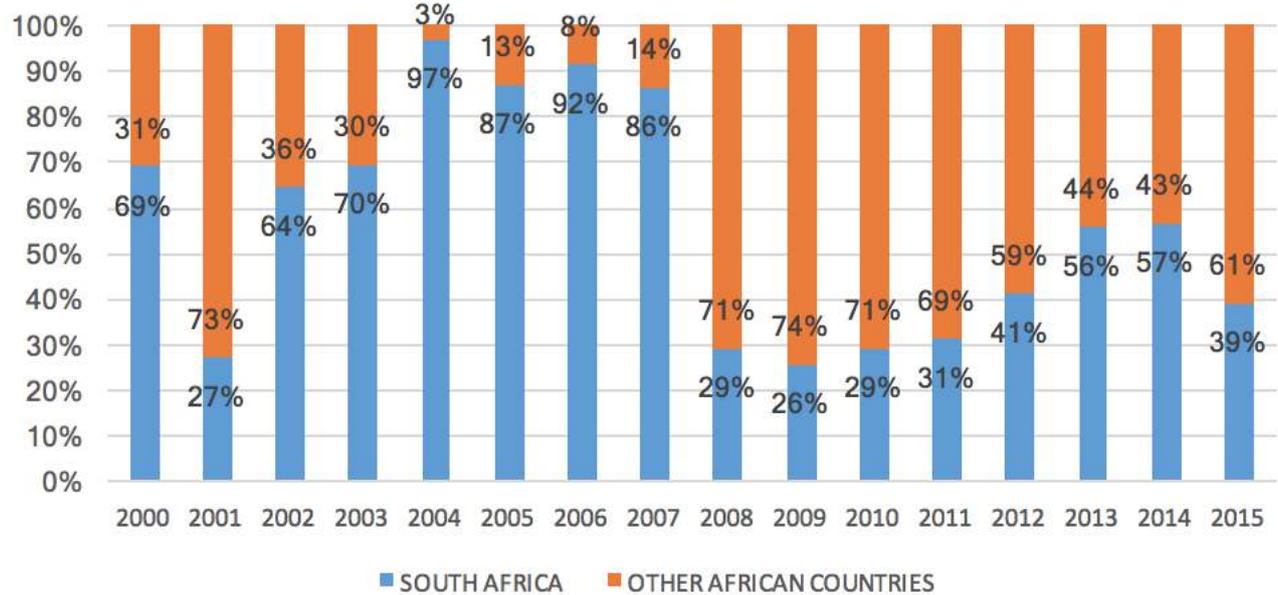


Figure 8: Percentage of imports of dried abalone from Africa (South Africa and other African countries) to Hong Kong, 2000–2015. Source: Census and Statistics Department, Custom code: 03078990 – Abalone (*Haliotis spp.*), dried, salted or in brine, including those smoked.



5.3. Dried abalone: re-exports

A sizeable portion of the dried abalone imported into Hong Kong is re-exported. An average 24% of all dried abalone imported to Hong Kong was re-exported to other countries annually between 2000 and 2015. In the most recent four years assessed (2012–2015), Hong Kong re-exported dried abalone to 12 countries (of over a tonne in any year). These dried abalone re-exports were sourced from 23 countries.

5.3.1. Major destination countries

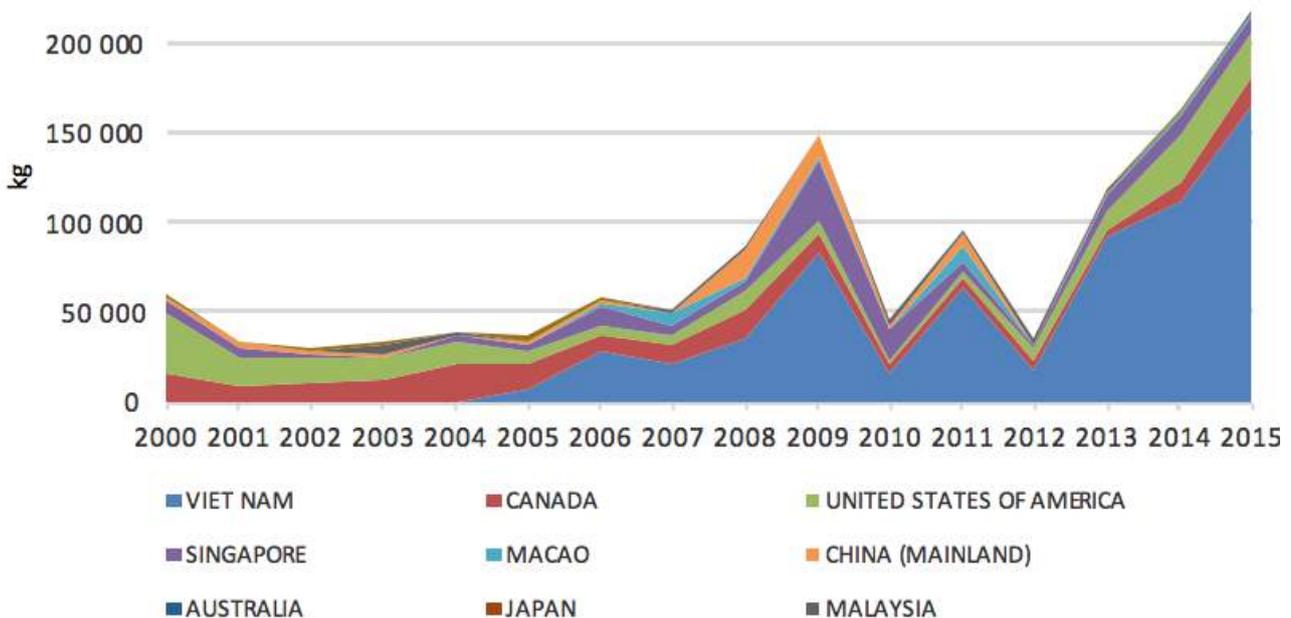
Re-exports of dried abalone from Hong Kong ranged between ~30 tonnes and ~220 tonnes during the years 2000–2015 with four destination countries, Viet Nam, USA, Canada and Singapore, making up more than 90% of this trade.

“Viet Nam, USA, Canada and Singapore, made up more than 90% of Hong Kong's re-exports of dried abalone between 2000–2015.”

Viet Nam had the greatest share of Hong Kong’s re-exports of dried abalone, with a total of ~645 tonnes during 2000 to 2015 (51%). As a result, trends in dried abalone re-exports were largely determined by fluctuations in re-exports to Viet Nam (Figure 9). The re-export trade with Viet Nam began in 2004, and has increased rapidly since then, reaching ~84 tonnes in 2009, ~64 tonnes in 2011 and more than 100 tonnes in 2014 and 2015.

Re-exports of dried abalone from Hong Kong to other destinations were significantly lower. A total of ~200 tonnes (2000–2015) was re-exported to the USA, the next largest destination country for dried abalone re-exports from Hong Kong, while ~175 tonnes was re-exported to Canada, and ~130 tonnes to Singapore. All of these re-export destinations include populations of Chinese ethnic origin.

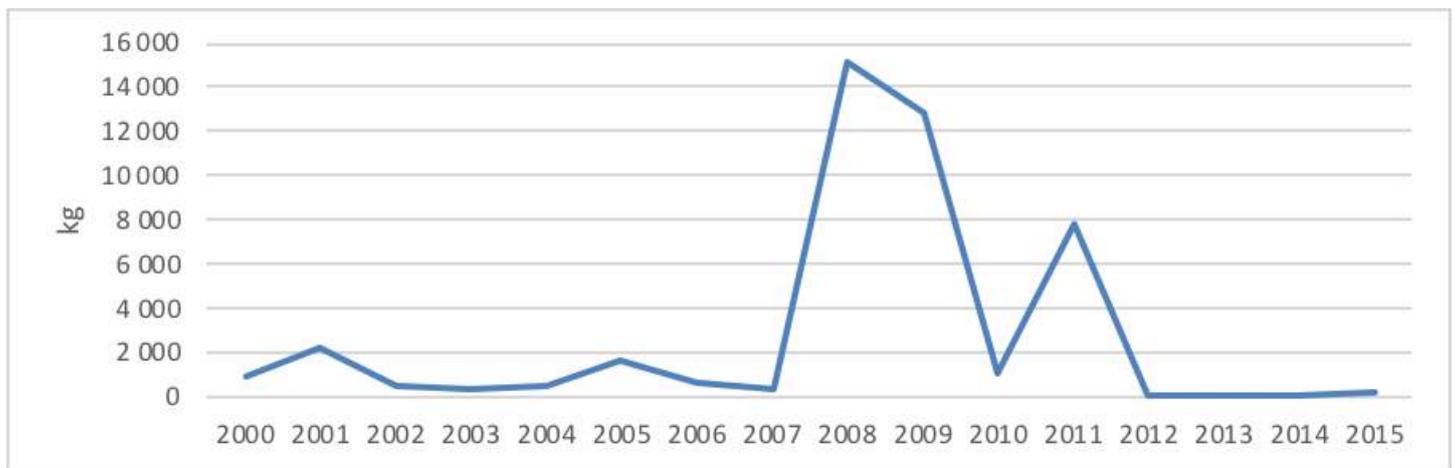
Figure 9: Re-exports of dried abalone from Hong Kong, by weight (kg), 2000–2015. Source: Hong Kong Census and Statistics Department, Custom code: 03078990 – Abalone (*Haliotis* spp.), dried, salted or in brine, including those smoked.



5.3.2. Re-exports to mainland China

Mainland China was the fifth largest re-export destination for dried abalone re-exports from Hong Kong, with ~44 tonnes of dried abalone re-exported between 2000 and 2015. Trade with mainland China is noteworthy in part because of its erratic trade pattern over the years (see Figure 10), but also due to its importance as a major consumption centre and trading partner for Hong Kong traders, as identified during market surveys. Prior to 2008, the average quantity of dried abalone re-exports to mainland China was ~1 tonne. This changed dramatically between 2008 and 2011, where an average ~9 tonnes of dried abalone were re-exported to mainland China. It is unclear what spurred the dramatic increase in trade between 2008 and 2011, but the Chinese Government had implemented an extensive economic stimulus package in response to the Global Financial Crisis in 2008. The economic stimulus apparently drove up domestic investment and consumption and helped the country weather the global downturn, maintaining its economic growth trajectory (Morrison, 2015). Domestic consumption in mainland China during this time may have translated into demand for imported dried abalone, although the specific links to demand for dried seafood products such as abalone is not apparent. In 2012, re-exports reduced sharply to less than 100 kg, and have remained around this level up until 2015.

Figure 10: Re-exports of dried abalone from Hong Kong to mainland China, by weight (kg), 2000–2015. Source: Hong Kong Census and Statistics Department, Custom code: 03078990 – Abalone (*Haliotis* spp.), dried, salted or in brine, including those smoked.



5.3.3. Re-exports of Africa-sourced dried abalone

Of all dried abalone from African countries, only abalone from South Africa was re-exported to other destination countries/territories between 2012 and 2015. The only exception is the re-export to Macau of 5 kg of dried abalone from other African countries NESOI¹⁰ There was a total of nine destination countries/territories for South African abalone from Hong Kong during the four year period (2012–2015), and five of these countries/territories took up 94% of the re-exports. The greatest amount of South African abalone from Hong Kong was re-exported to Singapore (~3.8 tonnes during the years 2012–2015), followed by USA (~1.9 tonnes), Macau (~1.7 tonnes), Canada (~1.6 tonnes) and Taiwan (~1.3 tonnes). All other destination markets received less than one tonne of South African dried abalone re-exports from Hong Kong, namely Viet Nam, Australia, mainland China and Malaysia.

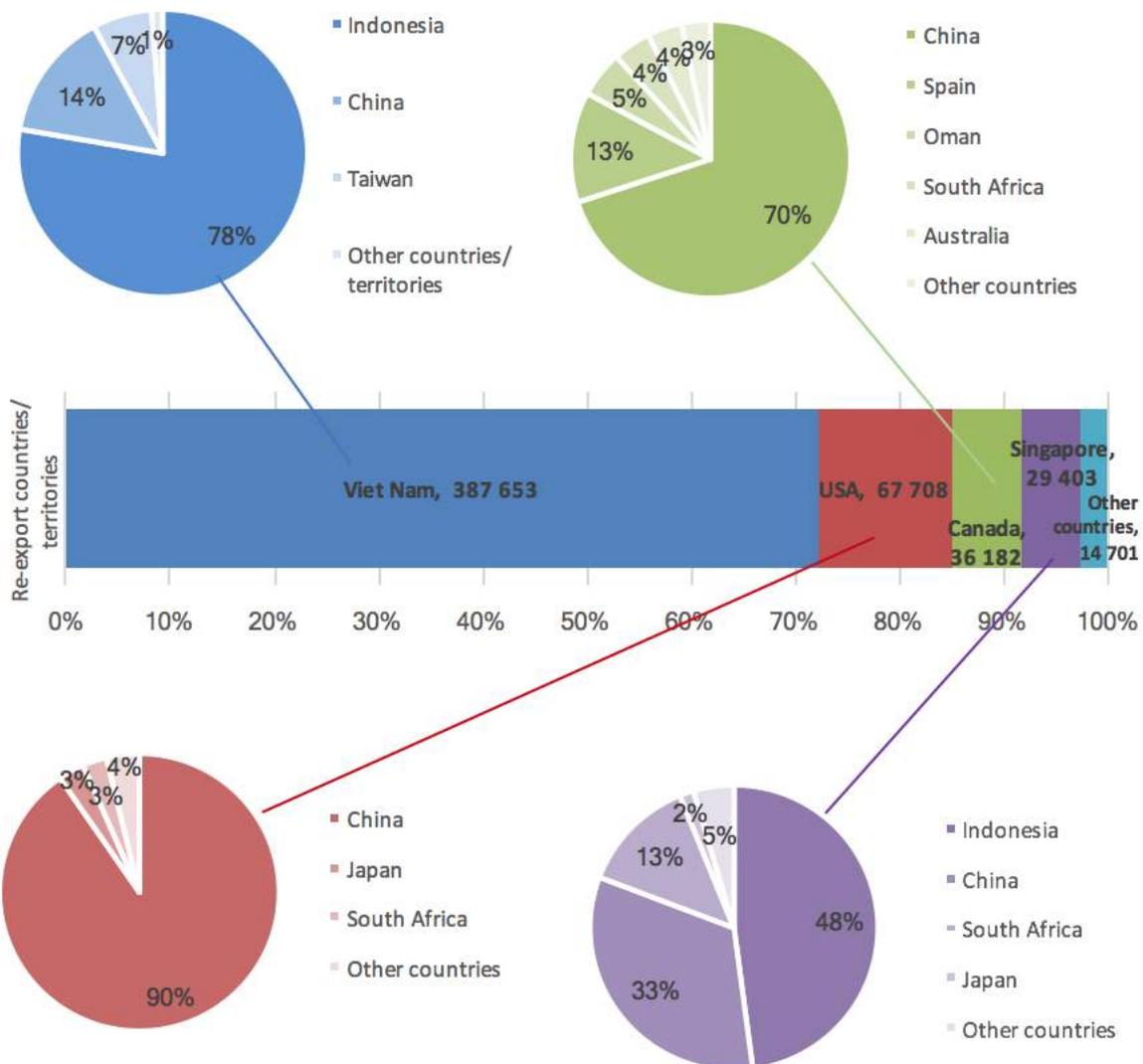
¹⁰ Not Elsewhere Specified or Indicated.

5.3.4. Source countries for Hong Kong's abalone re-exports

Despite importing dried abalone from a wide range of countries, trade data from the Census and Statistics Department reveals that Hong Kong's dried abalone re-exports are primarily made up of abalone from two sources, namely China and Indonesia. Dried abalone from both countries combined made up 88% of all dried abalone re-exported from Hong Kong (during 2012–2015; Figure 11).

There were, however, some notable discrepancies in the import and re-export data on Hong Kong's abalone trade. The size of Hong Kong's re-exports of dried abalone which are sourced from Indonesia and mainland China do not match with reported amounts of imports from these

Figure 11: [Bar graph] Top re-export countries/territories for Hong Kong's dried abalone, country/territory and sum of weight (kg), 2012–2015. [Pull-out pie graphs] Source countries/territories for each of Hong Kong's top re-export countries/territories for dried abalone, percentage by weight, 2012–2015. Source: Hong Kong Census and Statistics Department, Custom code: 03078990 – Abalone (*Haliotis* spp.), dried, salted or in brine, including those smoked.



countries. For example, a total of ~156 tonnes of Chinese dried abalone was re-exported from Hong Kong during the four-year period (2012–2015). Yet, import records show that only ~55 tonnes of dried abalone had been imported from mainland China during 2012–2015, and in the 16-year period (2000–2015), a total of ~104 tonnes of dried abalone from mainland China had been imported.

Similarly, re-exports of Indonesian dried abalone totalled ~317 tonnes between 2012 and 2015, but Hong Kong had in fact not recorded any imports from Indonesia during the same period. While a total of ~359 tonnes of dried abalone were imported from Indonesia to Hong Kong during the prior 12-year period (2000–2011), it is unlikely that it would be stockpiled for such a long length of time.

A possible reason is the under-reporting of dried abalone imports from mainland China and Indonesia or potentially over-reporting of re-exports; another possibility is that there may be some local processing of live and frozen abalone imports into dried abalone. A third possibility could be deliberate mis-declaration by Hong Kong exporters, declaring higher valued abalone (e.g. from South Africa, Japan, etc.) as lower valued abalone (e.g. from Indonesia or mainland China), in order to obtain a lower trade tariff rate.

“Given that dried abalone are broadly of a similar shape, it would be conceivable that batches of dried abalone from differing countries of origin were transported together, but declared as a lower valued item.”

Barring the local processing option, since most abalone is imported after it has been dried, a combination of the other options seems likely. Grey trading is apparently the dominant mode of imports of other dried seafood products (namely dried sea cucumber; Fabinyi, 2015), and similar channels are likely for dried abalone given that it is often the same kinds of traders that are involved. One form of grey trading is the practice of moving small quantities of goods across borders, bypassing the need to make trade declarations, otherwise known as “parallel trading”. Indeed, several traders surveyed for this report had offered the use of “couriers” for the cross-border trade, for an additional fee. A considerable portion of the trade with mainland China may have occurred without being recorded in government trade records.

Co-mingling of items is apparently common in other dried seafood trade, and sometimes deliberately done for the purpose of attracting a lower tariff (Fabinyi, 2015). Given that dried abalone are broadly of a similar shape, it would be conceivable that batches of dried abalone from differing countries of origin were transported together, but declared as a lower valued item.

As for Viet Nam’s role, studies of traders in Beijing have indicated that seafood is sometimes imported from Viet Nam to Nanning, in Guangxi province, before being transported up north (Fabinyi and Liu, 2016). Yet Hong Kong remains, by comparison, the primary source for dried seafood products for these Beijing traders (Fabinyi, 2015). Clarity is needed on the extent of the grey trade between Hong Kong, mainland China and Viet Nam, and warrants further investigation by Hong Kong’s Customs and Excise Department for possible legal infringements.

Retail outlets



HONG KONG'S MARKET FOR ABALONE

鮑網益

新張特



6. HONG KONG'S MARKET FOR ABALONE

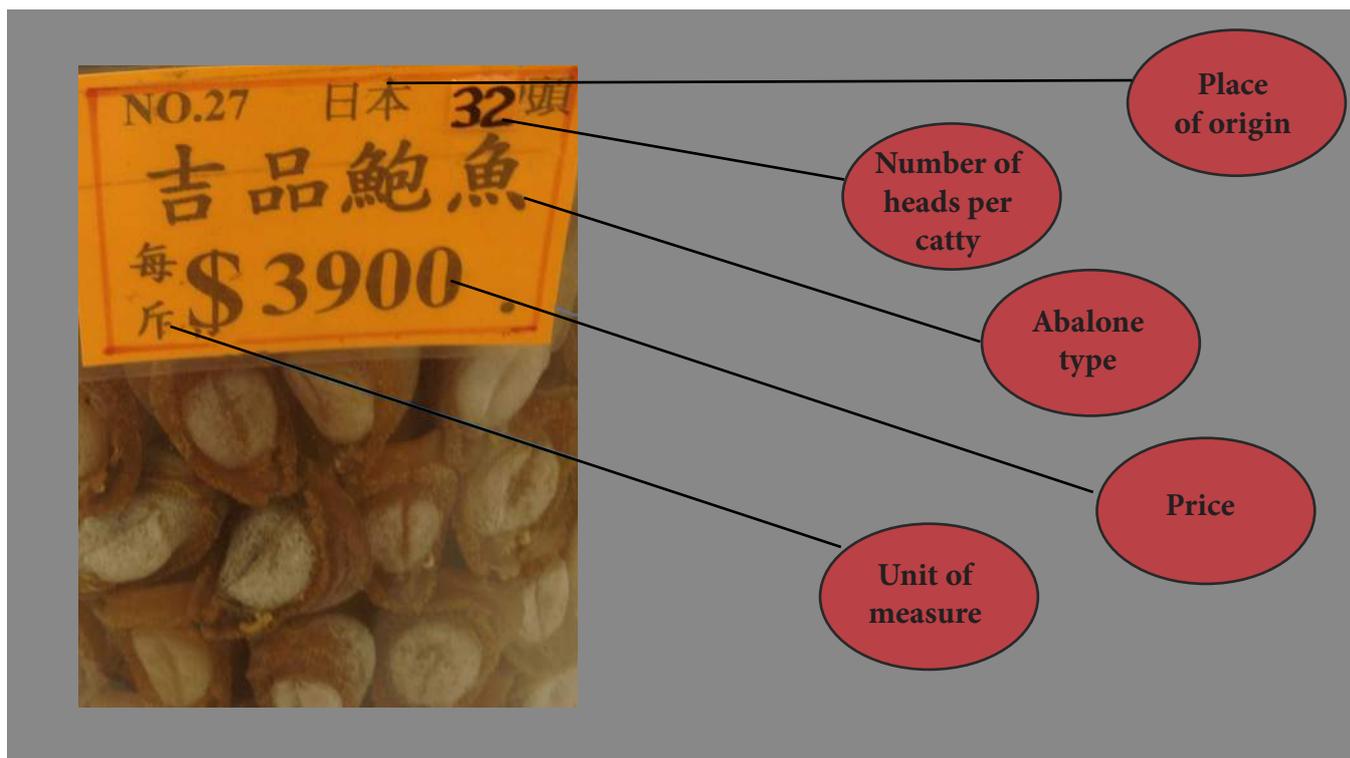
In order to understand the dried abalone market better, surveys of 88 dried seafood outlets in Hong Kong were conducted. Three dried seafood outlets in Macau were also surveyed, but only as a comparison to Hong Kong on sourcing and pricing structures. Some comparative price analysis of dried abalone in the two main districts where dried seafood outlets in Hong Kong were concentrated, namely Sheung Wan and the Yau Tsim Mong district, were undertaken. Data from 17 large restaurant and hotel chains were also surveyed during a Weddings Fair, since banquets that include abalone dishes are often served at these establishments. These data were used to supplement the analysis of abalone prices.

The range and type of dried abalone for sale in Hong Kong were documented during the market surveys. This inventory examined the varieties of dried abalone found in the market, but mainly focused on the types of South African abalone (*H. midae*) available—distinguished by type or processing method—and to a lesser extent, dried abalone from other countries. The surveys provided the occasional opportunity to strike up in-depth conversations with traders, which were helpful in elucidating the nuances in pricing and quality of the range of dried abalone available. Awareness about illegally-sourced abalone and industry practices were inquired about where possible.

6.1. Abalone types in the Hong Kong market

Product labels for dried abalone typically specify the country of origin, size (in number of “heads” or abalone pieces per catty; see section 6.2) and price (per catty or tael; see section 6.2), information

Figure 12: Details included in a typical product label for dried abalone sold in Hong Kong.



that is required by law to be presented (Figure 12). However, in a number of cases, traders have included further descriptions of the product, such as specifying the abalone “type”, or brand (To *et al.*, 2006). This refers to additional descriptors to denote the method of drying (e.g. net abalone¹¹, which refers to drying in nets), size (emphasis on large sizes) or region in which it was sourced and/or manufactured (e.g. Yoshihama abalone, or 吉品鮑, from the Iwate region of Japan), highlighting the sub-varieties of abalone from a country.

Market surveys for the current report collected some 200 data points, of which 119 were data on abalone from South Africa¹². The data gathered show a range of abalone “types” used to describe dried South African abalone, including the generic South African abalone (南非鮑), which was found in 55% of records. The use of the term net abalone (網鮑 or 大網鮑) was found in 23% of records, while kippin abalone¹³ (吉品鮑) was also used for batches of South African abalone that utilised a traditional drying method from Japan, shaped with pointed edges, which were found on product labels in 16% of records. Some labels also referred to a desirable flavour of the product, namely the description of a sweet-centre (糖心鮑); this was used in 6% of records. Such differentiation in the product range signals varying aspects of quality (see Appendix 2 for further indicators of perceived quality, according to surveyed abalone traders).

11 網鮑 is translated from Chinese as “net” abalone, and refers to the way in which abalone is processed, i.e. abalone is dried on nets. The term is equivalent to Amidori abalone from Japan, suggesting that the traditional processing method for Amidori abalone has been adopted for processing abalone from other countries. For ease of understanding, net abalone will henceforth be used, unless referring directly to Amidori abalone from Japan.

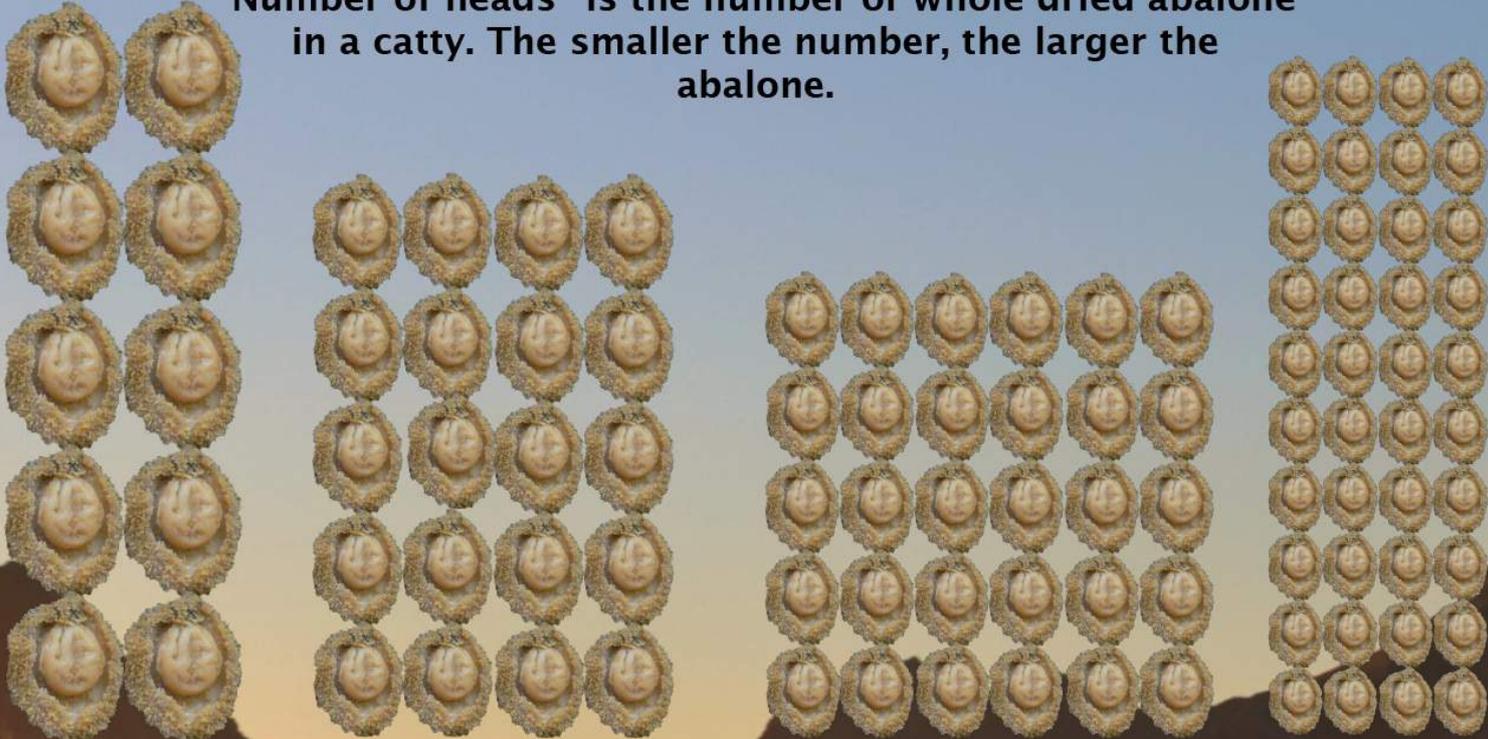
12 The researcher placed emphasis on collecting product and price information for South African abalone, therefore the number of records do not reflect actual proportions of South African abalone in relation to abalone from other countries.

13 The term “kippin” is the transliteration of 吉品鮑, and is used in the report to refer to a specific type of processing method where abalone is hung on a string to dry. The term is equivalent to Yoshihama abalone from Japan. For ease of understanding, kippin will henceforth be used, unless referring directly to Yoshihama abalone from Japan.

Figure 13: Unit measures typically used in Hong Kong’s dried seafood outlets.

1 catty of abalone = 0.61 kg / ~16 taels

“Number of heads” is the number of whole dried abalone in a catty. The smaller the number, the larger the abalone.



10 heads in 1 catty

20 heads in 1 catty

30 heads in 1 catty

40 heads in 1 catty

6.2. Abalone sizes in the Hong Kong market

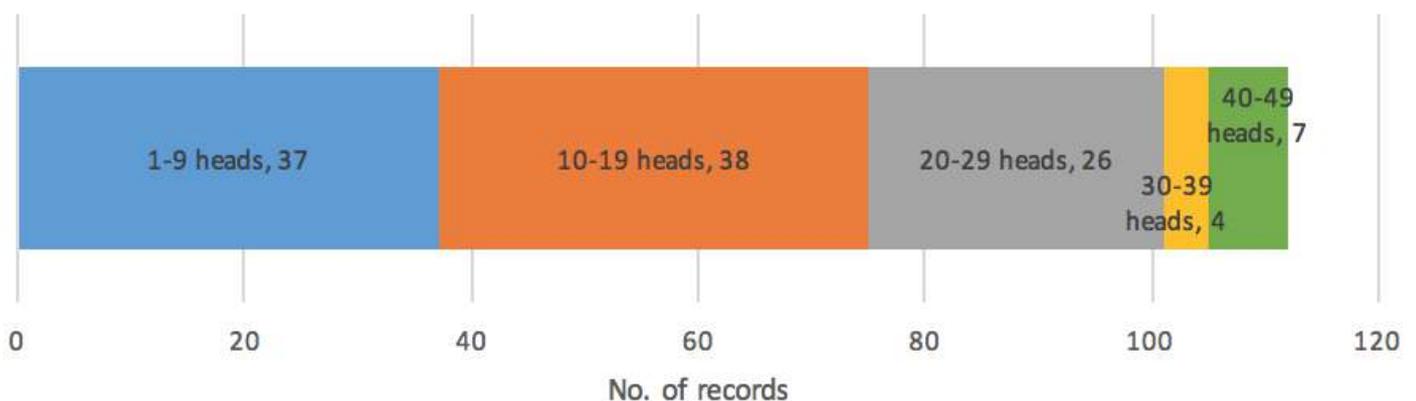
A wide range of abalone sizes was found for sale in Hong Kong. The researcher observed and recorded sizes of South African dried abalone ranging from two heads to 45 heads, however as Figure 14 shows, 90% of all recorded dried South African abalone are 30 heads or bigger. This contrasts somewhat with dried Japanese abalone, the next most common source country for dried abalone offered for sale in Hong Kong's dried seafood market. While the majority (65%) of Japanese dried abalone were still larger than 30 heads in size, the researcher found 14% were 30–39 heads, and another 14% were 40–49 heads.

“The prevalence of larger sized South African dried abalone could reflect market preferences, as this fits the preferred sizes of abalone served at Chinese banquets.”

The prevalence of larger sized South African dried abalone could reflect market preferences. Catering and banquet personnel surveyed for the current report have mentioned that South African abalone between 10–25 heads are in greatest demand, as this fits the preferred sizes of abalone served at Chinese banquets, especially when whole abalone pieces are served (as opposed to sliced). 58% of the dried South African abalone observed at Hong Kong's dried seafood market were within the 10–25 heads size range. For farmed abalone, such size preferences could mean that abalone could be grown and harvested to order. Hong Kong traders have also suggested that the size differences between South African and Japanese abalone are also due to natural grow-out capabilities—*H. midae* from South Africa tends to grow to a bigger size than Japanese abalone. It is quite uncommon to find larger sized Japanese abalone (1–5 heads), and this rarity is factored into the price where it is available. For example, the highest price observed in market surveys for this research was a 4–5 heads Japanese dried abalone, costing HKD62,400 (USD8,036) per catty.

In restaurants, smaller sized dried South African abalone are more likely used for making soups, although a cheaper variety of abalone is often chosen if used in soups, e.g. Dalian abalone (from mainland China), Sulu abalone (from the Philippines), or canned abalone from Australia and New Zealand.

Figure 14: Abalone per catty (or size) based on 119 observations of South African dried abalone during market surveys in Hong Kong, number of records. Source: survey of dried seafood outlets in Hong Kong.



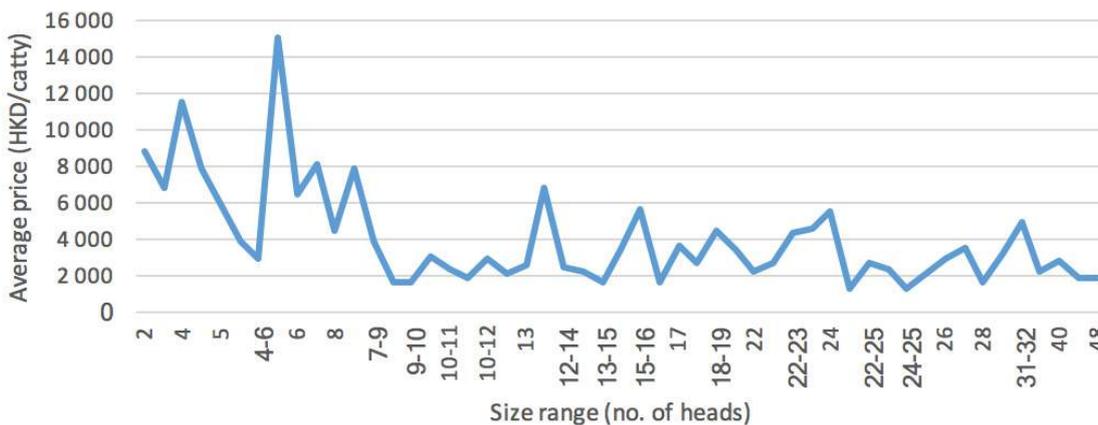
6.3. Price analysis

A total of 200 data points on abalone prices was collected during market surveys. To analyse these data, prices were categorised into the following size categories: 1–9 heads, 10–19 heads, 20–29 heads, 30–39 heads and 40–49 heads. The unit for comparison in this analysis was “number of heads per catty”¹⁴, which is the metric that was most often used by Hong Kong’s dried seafood outlets. All other metrics used in the market, i.e. “number of heads per tael”¹⁵, were subsequently converted to “heads per catty” to enable comparisons to be made.

6.3.1. Prices of South African dried abalone

A large range of prices was recorded for dried abalone from South Africa, as Figure 15 shows, although the general pattern was that as the size increased, so did the price, as conventional wisdom would suggest. Average prices for 1–9 heads abalone (at HKD6,431 or USD828) was found to be more than double the average costs of abalone in all lower size categories (see Figure 16).

Figure 15: Prices for South African dried abalone (HKD/catty) recorded during market surveys, by number of heads. Note: traders sometimes use a range to denote the product size, e.g. 12–14 heads. Sizes are either indicated in the product label or disclosed by the traders when probed.



Overall, the most expensive item of South African dried abalone recorded was a four-heads abalone in the Yau Tsim Mong district, priced at HKD26,240 (USD3,379), while the lowest price recorded was HKD1,200 (USD 155) for a 22 heads batch of abalone and a 40 heads batch in the Sheung Wan area. Price differences between the two districts were also apparent across all size categories. At the high end, the average price for dried abalone in size 1–9 heads (large size) was HKD3,372 (USD 434) in Sheung Wan and HKD9,528 (USD1,227) in Yau Tsim Mong. At the other end of the size scale, the average prices for dried abalone in size 40–49 heads (small size) were HKD1,995 (USD257) in Sheung Wan, compared with HKD2,693 (USD347) in Yau Tsim Mong. Figure 17 illustrates this through trend lines for the two districts, and an overall line which takes the average of all price records of dried South African abalone. The trend lines for both districts declines from large to small sizes, but the drop is much more acute with prices in Yau Tsim Mong. Curiously, prices for size 20–29 heads abalone in both districts are lower than those of size 10–19 heads. This, as explained by at least two traders surveyed,

Figure 16: Aggregated price data for dried South African abalone, n=119.

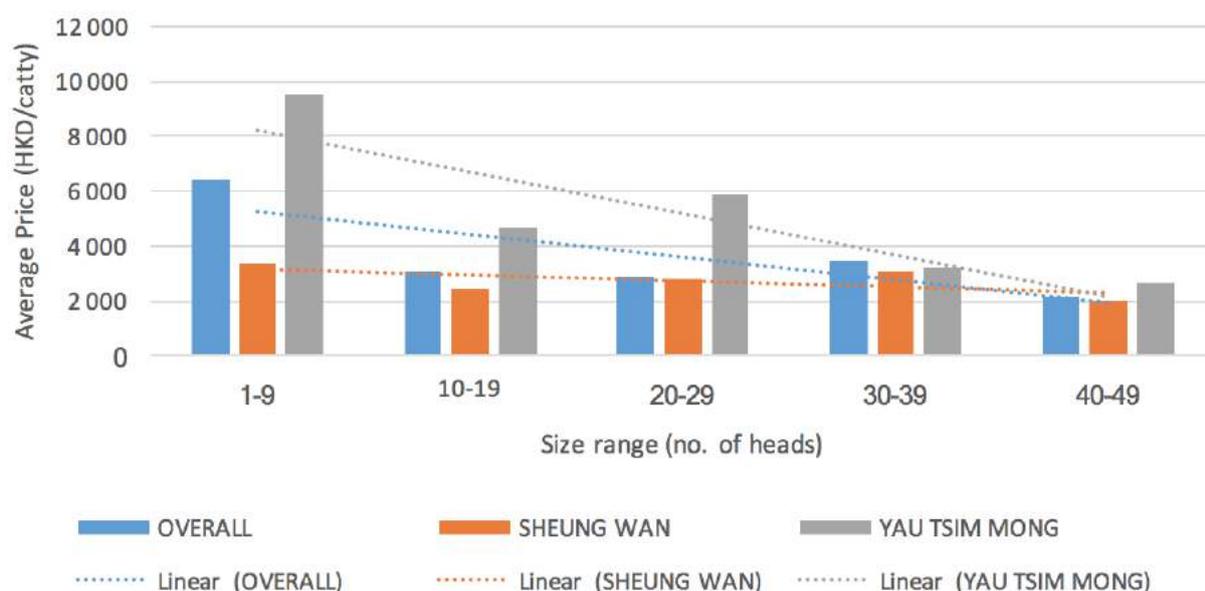
Size Categories	Average price in HKD/catty (USD/catty)	Highest price in HKD/catty (USD/catty)	Lowest price in HKD/catty (USD/catty)
1–9 heads	6431 (828)	26 240 (3379)	1600 (206)
10–19 heads	3066 (395)	15 040 (1937)	1380 (178)
20–29 heads	2885 (372)	7000 (902)	1200 (155)
30–39 heads	3433 (442)	4900 (631)	2200 (283)
40–49 heads	2153 (277)	2760 (355)	1200 (155)

¹⁴ One catty is equivalent to 0.61 kilogrammes.

¹⁵ One tael is equivalent to roughly 0.06 catties, or the more useful conversion of 16 taels to 1 catty. One tael is also equivalent to approximately 38 grammes.

is largely a factor of demand: restaurants in Hong Kong and mainland China tend to demand dried abalone that are of medium size (20 heads or smaller), in fitting with the size of banquet tables (24–28 heads abalone could serve two 12-seated tables). If using larger-sized abalone in banquets, it typically would have to be cut into slices, which is not as preferable or profitable for restaurants, as serving a whole abalone per seated guest at a banquet is seen as being of greater value.

Figure 17: Prices for South African dried abalone (HKD/catty) by size range (no. of heads) overall, in Sheung Wan and Yau Tsim Mong



The same traders also revealed that the cost price of dried abalone, for them as wholesalers, do not vary according to size, as it does for retail prices. Some larger-size abalone can sometimes be sourced at a lower price than comparatively smaller ones. Hence, the pricing pattern that is seen at retail outlets is more a marketing tactic by the industry than a reflection of business costs. Market surveys did show that the majority of traders relied on the logic that larger-sized farmed abalone would take longer to grow out, and hence would require greater capital costs.

The higher prices in Yau Tsim Mong overall were also somewhat expected—its location as a prime tourist area with high rents would be reflected in the prices charged for products sold in this area. Conversely, the prices charged in Sheung Wan were a signal not only of an area with lower rents, but also the prevalence of wholesale dried seafood businesses, with offered retail prices that were, according to surveyed traders in the area, not much greater than if selling in bulk.

No major price differences can be discerned between wild caught and farmed abalone, where the average price for wild caught 20–29 heads abalone was HKD2,851 (USD367), compared to farmed abalone of the same size range charging an average of HKD3,150 (USD406). However, of the 57 outlets that had South African abalone on offer, only 16 shopkeepers had given definitive responses about whether their products were wild caught or farm grown, with the rest either unwilling to respond, and/or were unsure of the answer. Therefore, accurate price comparisons cannot be made with the sampled responses.

Older stocks of abalone also attract higher prices. One of the few examples of this from collected price data was a 12–14 head South African dried abalone, which has purportedly been kept for over four years, and was offered for HKD3,180 (USD410). This compares with the price of a smaller sized

20 head South African abalone from the same outlet that had just arrived in store, being offered for HKD1,480 (USD191). Some reasons were offered by traders. First, the maturity in a batch of abalone, in other words the length of time abalone has been kept dried, tends to suggest greater refinement and maturity in taste. It is rationalised that time in a dry environment enables the dried abalone to leach out its inner salinity, which is visible by the layer of white powdery coating that forms on its surface. Traders describe a sweetness that remains with matured abalone that has been kept dry, and placing abalone in a sealed glass jar helps to maintain this dryness and assists in the saline leaching process.

Second, the prices of abalone for Hong Kong traders were apparently higher a few years ago than in the survey year (2016). This largely corresponded with the anti-graft campaign that was initiated in late 2012 by the Chinese Government, which according to traders had led to intense scrutiny of gift-giving practices by government officials and associated spending on luxury items. Several traders suggested that prices have been cut by half as a result.

A few traders offered a third reason for the price drops, namely a purported oversupply of dried abalone in the market in recent years. This is somewhat difficult to assess, since it is uncertain if it was an oversupply in the market (from slow sales in proportion to stocks held) that had caused prices to reduce, or that oversupply occurred as a result of lower prices, or a combination of both dynamics over time.

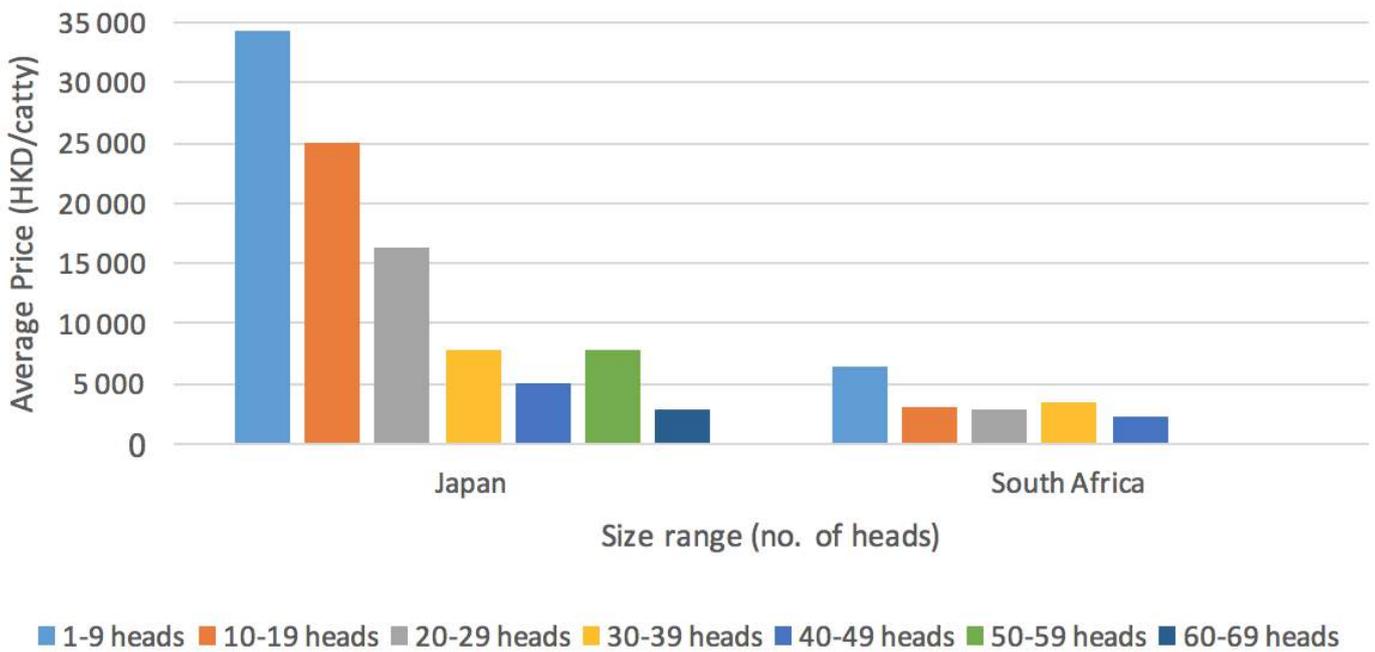
“Of the 57 outlets that had South African abalone on offer, only 16 shopkeepers had given definitive responses about whether their products were wild caught or farm grown, with the rest either unwilling to respond, and/or were unsure of the answer.”

Trade statistics suggest at least one scenario to be the case. Dried abalone imports to Hong Kong have increased steadily over the years, and as traders tend to stock up when prices are low, this could have led to a local oversupply if subsequent sales were lower than the rate of imports. However, re-exports of dried abalone have also grown at a higher rate than imports in recent years, hence at least outbound sales do not appear to have slowed. In 2012, just 13% of Hong Kong’s dried abalone imports were re-exported. This figure changed to 55% in 2014, and 59% in 2015. Re-exports are primarily made up of dried abalone from mainland China and Indonesia, therefore oversupplies could still be valid, but specific to dried abalone from certain countries of origin, including South African dried abalone, leading to lower prices.

6.3.2. Price comparisons between dried abalone from different countries of origin

The prices of dried abalone also differ somewhat based on its country of origin. The most readily available dried abalone in Hong Kong, from a country other than South Africa, was Japanese abalone, with 75 price records from 31 outlets (out of 88 outlets). The superior quality that is ascribed to Japanese abalone is clearly reflected in the prices charged, with higher prices found at every price range for Japanese, compared with South African dried abalone (Figure 18). Average prices of Japanese abalone sized 1–9 heads (large size) were more than five times higher than South African abalone of the same size (HKD35,415/USD4,561 and HKD6,431/USD828, respectively). At the other end of the scale, Japanese 40–49 heads (small size) dried abalone were twice as expensive, with average prices at HKD4,957 (USD638) compared to HKD2,153 (USD277) for the same size range of South African dried abalone.

Figure 18: Prices for Japanese and South African dried abalone (HKD/catty) by size range (no. of heads)



Although there were only limited price records collected for dried abalone from other countries, available price data along with the collected views of traders suggest a hierarchy amongst dried abalone from different source countries. Japanese dried abalone is clearly in a class of its own, followed by Middle East dried abalone. South African dried abalone is priced slightly lower, followed by Australian and New Zealand dried abalone. Dried abalone from Korea, the Philippines, Indonesia and mainland China is considered of lesser value, and traders have suggested purchasing these to use in soups rather than braised, given their poorer taste and texture.

6.4. Traders’ perceptions of South African abalone

According to traders, there are several market advantages for South African dried abalone compared to its competitors. South African abalone offers a more affordable choice compared to the higher quality and priced Japanese dried abalone. For restaurants, this price advantage makes the South African variety a preferable alternative over Japanese abalone, in order to secure profit margins. Perceptions amongst traders about the quality of South African dried abalone is generally positive, although those that do not have it in stock tended to lambast it as less appealing in both taste and texture than others (e.g. Japanese and Middle East abalone) in the market (see Box 1).

“According to traders, there are several market advantages for South African dried abalone compared to its competitors. South African abalone offers a more affordable choice compared to the higher quality and priced Japanese dried abalone.”

Traders were also likely to suggest South African dried abalone to consumers if the purchase is intended as a gift. The combination of size, consistency in shape and its more economical price renders South African dried abalone a practical choice.

Box 1: Distinction in quality perceptions of abalone from different countries

Abalone from a variety of countries is available for sale in Hong Kong's dried seafood outlets. Traders that were interviewed as part of the market surveys of this research reveal some common distinctions for abalone from these different source countries.

Compared to Japanese abalone, which is apparently smooth to the touch, South African abalone has a rough surface and is perceived by traders to lack the sweet centre that is valued amongst consumers. Another downside of *H. midae* is the limited increases in size after dried *H. midae* is rehydrated compared with other abalone types, with a number of traders suggesting that South African abalone is, as a result, of poor value than the pricier Japanese abalone.

Japanese abalone is considered top-of-class, due to a highly-valued combination of enduring smell, rich taste, and an enviable consistency in drying and processing techniques. Japanese abalone tends to be smoother to touch when dried, and less prickly than South African abalone. Preferences for the three types of abalone are said to depend on the acquired taste of different consumers, with Oma abalone (from Japan) being softer and taking less time to cook, while Yoshihama abalone (from Japan) has a more pungent and metallic flavour.

Middle East dried abalone from Oman is comparable, if not slightly costlier than South African dried abalone. It has been suggested that Middle East abalone may have a stronger smell and sharp taste. Traders understood that Middle East abalone was dried directly in the sun, resulting in abalone batches that are consistent in shape. It is also considerably more effectively dried, compared with South African abalone which can at times seem insufficiently dried¹⁶. Older consumers are said to prefer Middle East abalone over South African due to its softer texture, according to traders, while the restaurant trade tend to prefer the latter.

Australian and Mexican abalone were found during market surveys for this research, but were less often available in dried form. A large proportion of Australian and Mexican abalone is purportedly canned. Amongst the countries that produce canned abalone, these two are the most highly preferred by consumers in Hong Kong. Traders noted the unpolluted waters of southern Australia, which is prime habitat for Australian abalone, although its texture does not compare as well to Japanese and South African abalone. The canned Mexican abalone brand, Calmex, is popular in Hong Kong, although the country's production output of abalone overall is small by comparison. Traders differentiate between a deep water abalone that originates in the south of the country, which is smaller in size and canned with a Calmex black label, while a shallow water abalone is canned with a Calmex pink label.

¹⁶ One trader suggested that South African abalone that did not appear to have been dried completely could indicate that the abalone was poached. Abalone poaching operations in South Africa have been known to have poorer processing techniques, resulting in the sale of poached products that are insufficiently dried.

6.5. Awareness of illegal activities in the abalone trade

Four out of every five (80%) dried seafood traders that were asked were aware of unlawful products or behaviour in the abalone trade. Different perspectives on illegality were revealed, disclosing unscrupulous practices in source countries, while manipulative or deceptive practices by Hong Kong traders to deceive consumers were also discussed.



~80%

of dried seafood traders were aware of unlawful products or behaviour in the abalone trade

6.5.1. Awareness of abalone poaching in South Africa

When questions about the illegal activities concerning South African abalone were raised, a number of traders were able to elaborate on what these entail.

Traders were aware that overharvesting practices had in the past reduced the availability of South Africa's wild abalone available for export. It was understood that illegal harvests beyond government quotas continue to erode wild abalone populations in South Africa. When probed, two traders explained in some detail the size limits for South Africa's wild abalone catch, and legal catch restrictions. According to these traders, this catch limit translates to legal wild stocks of dried abalone of over roughly 20 heads in size. Smaller sized dried abalone, below 20–30 heads, are therefore likely to have been fished outside of South Africa's legal regime. In contrast, no restrictions on harvest size exist for farmed abalone in South Africa, and typically farmed varieties found in Hong Kong tend to be no larger than around 20 heads. There are no clear visual means of distinguishing between wild and farmed varieties, however. Hence identifying illegally-sourced abalone based on size remains elusive.

Another trader explained their understanding of the assignment of catch quotas to licensed fishers. The trader had assumed that fishers or companies in South Africa with catch licences also had some exclusivity over sections of water, and that poaching of abalone from the wild is effectively theft of private property.

“Chinese criminal syndicates effectively manage the trade between South African poachers and importers in Hong Kong, and control the flow and prices of poached abalone.”

The links between Chinese triads, higher up in the trade chain, were also known to several traders. It was believed that Chinese nationals that are based in South Africa had some control over the poaching of abalone, and engage and co-ordinate with locals in the community to undertake poaching activities. One trader explained that Chinese criminal syndicates effectively manage the trade between South African poachers and importers in Hong Kong, and control the flow and prices of poached abalone. The trader noted that it would be difficult for Hong Kong traders to bypass these intermediaries, and source directly from South African fishers and processors.

However, the same trader felt the centralised control of prices worked to the benefit of Hong Kong traders, as it creates a level playing field in terms of standardised unit costs. He believed the stability

of prices, and reduction in unit costs during good harvest years were made possible through this centralised management. Another trader conceded that “if we don’t have illegal imports, how could Hong Kong have so much to eat?”

6.5.2. Manipulations and deceptions in the Hong Kong dried abalone market

Traders also described other ways in which abalone may be manipulated to yield a higher price and profit. One tactic that was shared by a number of traders was artificially to increase the weight of individual pieces by re-soaking abalone in salty water or adding sulphites as a preservative. They believed that abalone that are slightly moist to the touch may have been treated in this way. Traders described another technique to manipulate the appearance of abalone, so as to defraud buyers into believing that another species was being purchased. This often involves sanding out the edges of a dried abalone and drilling holes to mimic string drying methods of the Japanese Yoshihama abalone.¹⁷ This facelift approach is apparently undertaken by some traders in Hong Kong and has managed to fool some experienced observers in the trade.

Traders also spoke about deceptions over the actual price of abalone by obscuring the unit of measure, which some traders believed was likely to happen in tourist areas such as Tsim Sha Tsui and Mong Kok. Consumers might be led to believe that the product was sold in catty, when in fact the trader was selling in tael, a 16 times price difference. However, market surveys for this report did not find any instances of prices and the unit of measure that were not clearly displayed. Traders also spoke about the deliberate substitution of sliced abalone with sliced conch, a product that is difficult to distinguish when cut up in slices, and costs considerably less.

“One trader noted that it would be difficult for Hong Kong traders to bypass criminal syndicates’ intermediaries, and source directly from South African fishers and processors.”

The Trade Description Ordinance (Cap. 362) specifically outlines “false trade descriptions” as goods supplied that are not of the same kind as one that a person has agreed to acquire. This extends to the standard of the goods that can be expected and deceptive information about the goods’ availability, price and how it is calculated. In 2010, Hong Kong’s Customs and Excise Department (2010) conducted a major operation to crack down on deceptive trade practices such as this, raiding 31 dried seafood shops at the time, arresting 28 individuals for the sale of fake dried abalone slices, and confiscating 177 catties of dried abalone (Customs and Excise Department, 2010). Since this enforcement operation, the Customs and Excise Department has published details of one other seizure at a dried seafood outlet in 2015, this time seizing 48 catties of fake abalone slices and arresting the proprietor of the outlet (Customs and Excise Department, 2015a), while a restaurant was penalized in the courts in May 2017 for serving conch in place of abalone to save on costs (Siu, 2017).

6.5.3. Identifying illegal products

Numerous traders described the quality of poached dried abalone from South Africa as often lacking in consistency, one sign of which is that some abalone pieces may not be completely dried (see Appendix 2). Residual moistness on the surface and weight are signals to experienced traders that such abalone pieces are poorly and insufficiently processed. The few traders encountered that

¹⁷ This type of manipulation should be distinguished from abalone producers in South Africa that have taken Japanese processing methods and applied it to the processing of *H. midae*, which is subsequently sold legitimately as being derived from South Africa.

no longer deal in South African abalone found it difficult to recommend choosing it, and indeed to suggest where legal and good quality ones should be bought, due to the plethora of poached or bogus abalone. Further, traders mention that it would be especially difficult for consumers, without experience, to tell the difference. On where poached or bogus abalone might be found, traders generally felt that outlets that do not rely on regular customers and therefore had a lower reputational risk would be likely to stock such products, such as outlets that cater to tourists. Some traders felt that poached or bogus abalone are less likely to appear on display at dried seafood outlets, particularly in the wholesale area of Sheung Wan, which attract more discerning consumers including bulk buyers and repeat customers. However, it was also noted that restaurants, which order in large quantities, are quite content to accept poorer quality abalone from wholesalers in return for a better price. It was therefore suggested by one trader that poached abalone, which may not be as finely processed, might be sold to restaurants. Finally, a few traders suggested that poorer quality abalone may be harder to find in Hong Kong, but are instead exported to mainland China.



Common identifiers of poached South African abalone, according to Hong Kong traders

- At a store that doesn't rely on regular customers, such as tourist outlets
- Not on display in the storefront
- Sold to a restaurant looking for bulk quantity over quality
- Exported to mainland China

Dried abalone on sale in Hong Kong © Wilson Lau/TRAFFIC

6.6. Industry structure and practices

With the multitude of wholesale and retail businesses, all with a similar range on their stocklists, it would be plausible to assume that the dried seafood industry is occupied by largely homogenous players. Yet, market surveys for this research show a degree of market differentiation and niche development. Some businesses appear to have a geographical monopoly, dominating all dried seafood trade in a given district by opening several branches within a several blocks radius, and possibly making it less profitable for new entrants to set up in the same area. It is also not uncommon to find examples of businesses that have vertically integrated their retail outlets with

a wholesale arm, which traders are eager to emphasise as indicators of passed-down price advantages and quality safeguards.

Perhaps the most frequently mentioned key to businesses' success and survival, is the established relationship with their customer base. Traders tout their lines of regular customers and their ability to sustain their decades-long business, and credit their diversified clientele for enabling them to weather economic downturns. The Chinese Government's anti-graft campaign, which led to a decline in conspicuous consumption of luxury items such as abalone, created an economic jolt for Hong Kong's abalone traders, which they have survived due to their customer base beyond the mainland market.

Possibly due to strong business-to-business client relationships, retail prices appear to be less reactive to market competition, with a wide range of prices recorded during market surveys. Also, the profusion of products available, with abalone differentiated not only by source country, but also by size and type, make price comparisons a somewhat befuddling task. This could make non-price competition between abalone businesses more likely (Cheung and Chang, 2011).

“The Chinese Government’s anti-graft campaign, which led to a decline in conspicuous consumption of luxury items such as abalone, created an economic jolt for Hong Kong’s abalone traders, which they have survived due to their customer base beyond the mainland market.”

While consumer trust building is the most obvious point of distinction and competitiveness for dried seafood businesses, the emergence of branches of the same business opening in different locations points to the growing focus on building an association with consumers and their brand. Some businesses have branched out beyond the dried seafood enclave in Sheung Wan to several locations across the city, while other companies have capitalised on the growth of canned and shrink-wrapped abalone being sold outside of dried seafood shops, without having to establish a physical outlet of their own. Indeed, there are now several big brands in the dried seafood and traditional Chinese medicine sector that have expanded their specialty stores into multiple district shopping malls. This development makes the persistence of numerous small dried seafood wholesale and retail businesses the more remarkable, and perhaps attests to their capacity to retain value amongst regular customers. However, one advantage that a shop assistant from a big brand dried seafood outlet mentioned was that negative news about the abalone trade, such as past reports about the sale of “fake” abalone or unscrupulous practices in the dried seafood industry (Lo and Chan, 2010), have driven retail consumers to the big brands. In this regard, businesses in the dried seafood sector appear to be very sensitive to reputational risks, which may be a sign that industry players could be incentivised to self-regulate and drive out bad behaviour of individual companies in the sector.

E-commerce websites



E-COMMERCE TRADE

7. E-COMMERCE TRADE

An online survey was conducted in August 2017 in six e-commerce websites that serve the Chinese-speaking market, including one website that operates specifically in Hong Kong, and one China-based website focused on trade with the global market. These websites serve a range of different target audiences, and include three business-to-business (B2B) websites, two business-to-consumer (B2C) websites, and one consumer-to-consumer (C2C) website (Table 1).

Table 1: *E-commerce websites serving the Chinese-speaking market surveyed for South African dried abalone advertisements*

Website	Language	Target Markets	No. of adverts. (dried abalone)	No. of adverts. (South African dried abalone)	No. of companies offering South African dried abalone for sale
#1	English	B2B, global market	97	3	22
#2	Chinese	B2B, Chinese-speaking market	198	148	67
#3	Chinese	B2B, Chinese-speaking market	664	50	37
#4	Chinese	B2C, Chinese-speaking market	43	1	1
#5	Chinese	C2C, Chinese-speaking market	419	9	9
#6	Chinese	B2C, Hong Kong market	0	0	0
Total			1,421	212	114

7.1. Online availability of South African dried abalone

A total of 212 advertisements for South African dried abalone were found on five e-commerce websites, with no South African specific advertisements for dried abalone on the Hong Kong-based website. The majority of the advertisements (95%) were found on B2B websites, which might indicate considerable South African dried abalone trade online between manufacturers, wholesalers and importers, as well as retailers and restaurants. Only 4% were found on C2C websites, while less than 1% were found on B2C websites, which could indicate that end-consumers do not tend to buy South African dried abalone through online channels.

Advertisements for South African dried abalone were a fraction of all dried abalone advertisements (15%). The one exception was a B2B website, where South African abalone made up 75% of all dried abalone advertisements. The other two B2B websites had much smaller proportions (8%; 4%), while South African abalone comprised only 2% of all dried abalone advertisements in the B2C and C2C websites.

Advertisements for canned abalone and other abalone product forms appear to be more prevalent than dried abalone advertisements on B2C and C2C websites that target end-consumers. On one B2C website, advertisements for canned abalone were almost double those for dried abalone. On the Hong Kong-based B2C website, no dried abalone was being sold, but there were 53 advertisements for canned abalone and 23 advertisements for pre-packaged abalone. On the C2C website, a total of 179 dried abalone advertisements were found which, by comparison, is only slightly less than the 198 frozen abalone advertisements.

7.2. Location of sellers/companies

Most of the other China-based websites that focused on a Chinese-speaking audience had only sellers/companies from mainland China. There were 111 sellers/companies (of a total of 114) of South African dried abalone with known locations on the four e-commerce websites serving Chinese-speaking markets (websites #2–5). The majority (71%) of the sellers from the four e-commerce websites were from Guangdong Province (Map 1). Other notable locations of sellers included Liaoning (4%) and Shandong (3%) provinces, which are home to large numbers of China's abalone farms, as well as the coastal Fujian Province (3%). The large concentration of South African dried abalone sellers from Guangdong Province is consistent with findings of online trade in other dried seafood commodities such as shark fins, where numerous processing plants are located (Wu, 2016).

On the e-commerce website targeting the international market, South African dried abalone was been offered by nine sellers/companies, including ones from South Africa (seven sellers/companies) and mainland China (two sellers/companies).

Map 1: Locations of e-commerce sellers of South African dried abalone in China, based on information from online surveys of China-based e-commerce websites © Map data 2017 Google



7.3. Presence of Hong Kong traders

Interviews with Hong Kong traders during market surveys for the current report (section 6) suggested that mainland China was a major trade destination for dried abalone, but only two sellers/companies offering South African dried abalone for sale were clearly identified as being located in Hong Kong in the online survey. This suggests that China-based e-commerce websites are not a preferred channel for trade by Hong Kong sellers of South African dried abalone targeting mainland consumers at present.

Despite the lack of advertisements on e-commerce websites, market surveys in August–September 2016 (section 6) do show that many Hong Kong dried abalone retailers and/or wholesalers have an online presence. Business cards collected from dried abalone wholesalers/retailers indicate that some companies do make use of a dedicated website to display and offer products for sale (30%, n=23 business cards). Another 30% of the business cards also have social media account details provided. Platforms used include QQ and Wechat, which suggests they have some trade connections with buyers in mainland China, as well as Facebook.

The B2B websites surveyed do include the occasional advertisement from logistic companies offering assistance with Customs processing and import clearance for the transport of dried abalone goods to mainland China through Hong Kong, making use of the city's free port status and its zero tariff advantage. This provides some clues as to Hong Kong's role in the international trade of dried abalone to the mainland, and that it might not be Hong Kong dried abalone importers and wholesalers that are actively pursuing trade with China through online channels, but rather its logistics companies.



Dried abalone for sale at a Food Expo in Hong Kong © Wilson Lau/TRAFFIC

Consumer surveys



CONSUMER SURVEY ANALYSIS

Dried abalone are typically stored in a glass jar in dried seafood outlets in Hong Kong © Wilson Lau/TRAFFIC

8. CONSUMER SURVEY ANALYSIS

An online questionnaire was conducted to survey Hong Kong consumers about their attitudes and behaviours with regards to abalone. The questionnaire covered four areas, namely consumption experience, perceptions of quality and value, awareness of the status and threats to abalone, and demographic information. This section of the report highlights the main findings of each of these areas.

A total of 153 respondents was surveyed. Researchers based in Hong Kong used a snowball method to capture survey respondents, where one respondent would help recruit future respondents from among their network, but this survey dispersion approach through social networks could have the unintended consequence of capturing people of similar socio-demographics. Comparison of the demographics of survey respondents and of the general population in Hong Kong does reveal some important variances (Figure 19). The survey is skewed towards females, and people of higher affluence (since there were higher proportions of car and home ownership amongst the sample respondents). The survey also captured people that predominantly speak Cantonese as their main language (99% of respondents), and under-sampled individuals in Hong Kong that speak Putonghua and other Chinese dialects as their “usual” language, which represent 6% of the general population¹⁸. Caution should therefore be taken in interpreting the survey results in this section of the report, in view of the noted disparities of the survey respondents with the general population, as well as the small sample size.

Figure 19: Comparison of demographics between survey respondents and Hong Kong’s population.

	% of HK Population	% of Survey Respondents
Female	54% ¹⁹	67%
Cantonese	93% ²⁰	99%
Car ownership	23% ²¹	37%
Home ownership	50% ²²	54%

8.1. Consumption experience

The majority of the survey respondents appeared to have previously consumed abalone, with only three respondents, out of 153, stated that they had never tried it. Most respondents consumed abalone at least once a year, with a quarter of the respondents (26%) consuming abalone four or more times each year. The greatest proportion of respondents consume abalone two to three times a year (36%). Still, there was a sizeable proportion of respondents that consumed less frequently, at once a year (18%) or less (“not in the last 12 months”; 10%).

Since abalone is often marketed and sold according to its country of origin, survey respondents were asked about their experience with consuming abalone sourced from various countries. The results show that respondents were more likely to have tried abalone from South Africa than from other countries, with 53% having tried it before. This was followed by abalone from mainland China (43%), Australia (39%) and Japan (30%). Few respondents recalled having consumed abalone from Mexico (7%), Indonesia (4%), Middle East (2%) and other African countries (4%) in the past. This poor level of recall is consistent with a generally low market share of abalone (in all forms—dried, live, frozen, canned) imported from these countries during the past five years (2011–2015): Mexico (2%), Indonesia (zero imports), Middle East²³ (0.2%) and other Africa²⁴ (2%).

¹⁸ Census and Statistics Department (2012).

¹⁹ Census and Statistics Department (2016).

²⁰ Census and Statistics Department (2012).

²¹ Census and Statistics Department (2016).

²² Census and Statistics Department (2016).

²³ Includes imports from Oman and the United Arab Emirates.

²⁴ Includes imports from the Democratic Republic of Congo, Kenya, Mozambique, Namibia, Swaziland, Tanzania, Zambia and Zimbabwe.

Survey respondents were asked to recall the last time they had consumed abalone, in order to obtain insights about the typical experience of Hong Kong consumers. Questions were asked on where abalone was consumed, for what occasion, and who made the decision to choose abalone on the menu. Findings indicate that abalone is most frequently consumed in Chinese restaurants (58%), while consumption at home (33%) and hotels (8%) were less common.

More than half of the respondents stated that they had experienced consuming abalone at wedding banquets (54%). Family reunions were also a popular reason for choosing to eat abalone (33%). Celebratory events and festivals, such as the Lunar New Year (30%), birthdays (16%), company/business banquets (16%) and other festivals (14%) also gave cause for abalone consumption, although 16% of respondents had consumed abalone on no special occasion.

“The results show that respondents were more likely to have tried abalone from South Africa than from other countries, with 53% having tried it before.”

The decision to choose abalone from the menu was not often made by the respondent themselves, with only 15% stating that it was their own decision. The choice was often made by other family members (42%), the host (32%), or a friend (15%), when it was beyond the ability of the respondent to choose. When asked if they would choose something else on the menu in place of abalone if they had the choice, 14% stated that they would not, but 29% declared that they would. A further 41% asserted that they “maybe” would consider it. Alternative items that respondents suggested included other seafood items such as scallops, fish, shellfish and oysters; other high-value items such as bird’s nest soup; items that might be prepared in a similar way, such as conch, geoduck and imitation abalone (made with tofu); or other common dishes such as vegetables, mushrooms and meat dishes.

8.2. Purchase experience

Abalone sold in Hong Kong is available in various forms, and often depends on how it is prepared and where it is intended to be consumed. Not surprisingly, when asked about the form(s) in which uncooked abalone was usually bought, if at all, the most common was in a semi-prepared and packaged form (canned abalone, 57%), given the ease with which canned abalone can be prepared by people at home. Live abalone (42%) and frozen abalone (27%) were the next most common forms of uncooked abalone purchased, while 22% of respondents had experience of buying dried abalone.

The most popular type of outlets in which abalone was usually bought were dried seafood shops (42%), which tend to stock both dried and canned abalone. Supermarkets (37%) and wet markets (or small-scale market stalls; 34%) were also popular outlets for making purchases of uncooked abalone. Around 17–18% of the survey respondents had never bought uncooked abalone.

8.3. Perceptions of quality and value

Respondents were asked to rate abalone by country of origin, based on their own perception of quality, along a five point scale from “excellent” to “very poor”. Results showed that abalone from different countries was thought to exist in two divergent clusters (Figure 20). The first group consisted of abalone that was perceived to be “excellent” to “very good” by 50% or more of respondents, and included abalone from Japan, South Africa and Australia, in that order. The other group comprised abalone that was mainly rated as “very good” to “average” by ~25–40% of respondents, and included abalone from mainland China, Indonesia, the Middle East, other African countries (other than South Africa) and Mexico.

Results from scoring abalone from various countries based on perceived value for money also revealed two distinct clusters. As Figure 21 shows, Japan, mainland China, South Africa and Australia were seen to be of better value for money, with ~45–50% of respondents rating abalone from these countries within the “excellent” to “average” range. By contrast, ~25–30% of respondents gave abalone from Indonesia, Mexico, the Middle East and other Africa countries (other than South Africa) the same ratings (“excellent” and “average”). Note, however, that a high percentage of respondents (~50–70%) did not provide a rating for the perceived value of abalone from Indonesia, Mexico, the Middle East and other Africa countries, instead using either the option of “don’t know” or leaving the question blank, suggesting a lower level of awareness about the quality of abalone from these countries.

Figure 20: Consumer survey respondents’ perception of quality, by country of origin of abalone, n=153.

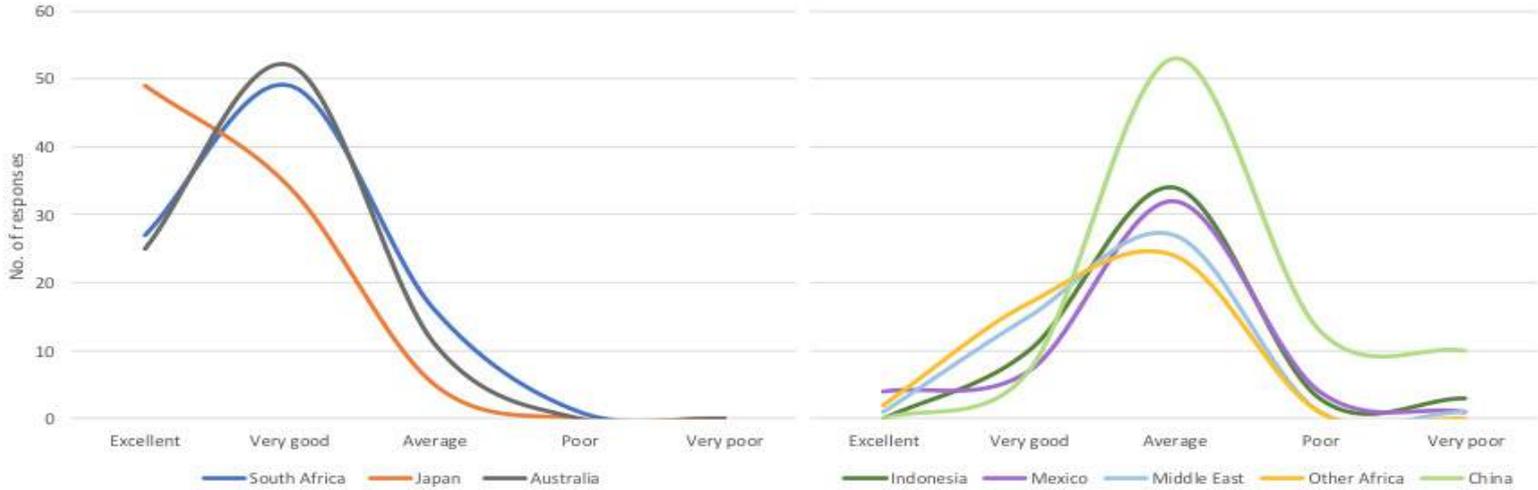
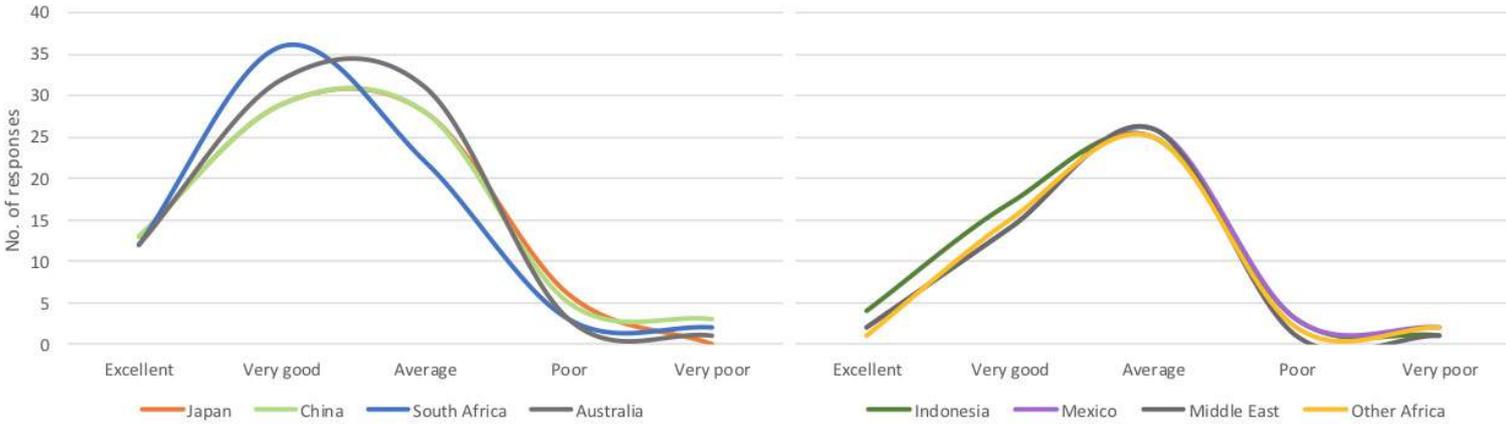


Figure 21: Consumer survey respondents’ perception of value for money, by country of origin of abalone, n=153.



8.4. Determinants of quality

Survey respondents were also asked to rate several characteristics as a determinant of good quality abalone. Seven characteristics were assessed, including:

- country of origin,
- size,
- weight,
- abalone type (i.e. Amidori, Yoshihama, Dalian, etc.),
- smell, and
- shape

Each characteristic was rated along a five point scale, from most important to least important.

Survey responses indicate that the top most important characteristics that determine good quality were country of origin, abalone type, smell, and size of the abalone (Figure 22). Around 38–45% of respondents rated these four characteristics as “most important” and “very important”. Respondents stated that the least important determinants of quality for abalone were shape, weight, and colour, in this order, with 18–29% of respondents rating these three characteristics as “least important” and “somewhat important”.

“Survey responses indicate that the top most important characteristics that determine good quality were country of origin, abalone type, smell, and size of the abalone.”

8.5. Influence on purchase decision

A follow on question asked about the factors that influenced survey respondents’ decision to purchase abalone. Six factors were considered, including:

- price,
- reputation of the product branding,
- reputation of the retailer,
- opinions of the shopkeeper,
- perceived rarity of the product, and
- overall quality (e.g. country of origin, abalone type, size, colour, smell, weight, and shape).

Each factor was again rated along a five point scale, from most important to least important.

Results show that price and overall quality of the product stood out as the top most important factors that influence abalone purchase decisions. Over half of the respondents (59% on price, 50% on overall quality) rated these two factors as “most important” and “very important” (Figure 23). Reputation of the retailer (29%) and reputation of the product brand (25%) were the next most important factors. Product rarity was considered the least important factor that influenced purchase decisions, with 43% of respondents rating it as the “least important” and “somewhat important” factor, followed by shopkeeper’s opinion with 31%.

Figure 22: Determinants of good quality abalone for consumer survey respondents, most important to very important, n=153.

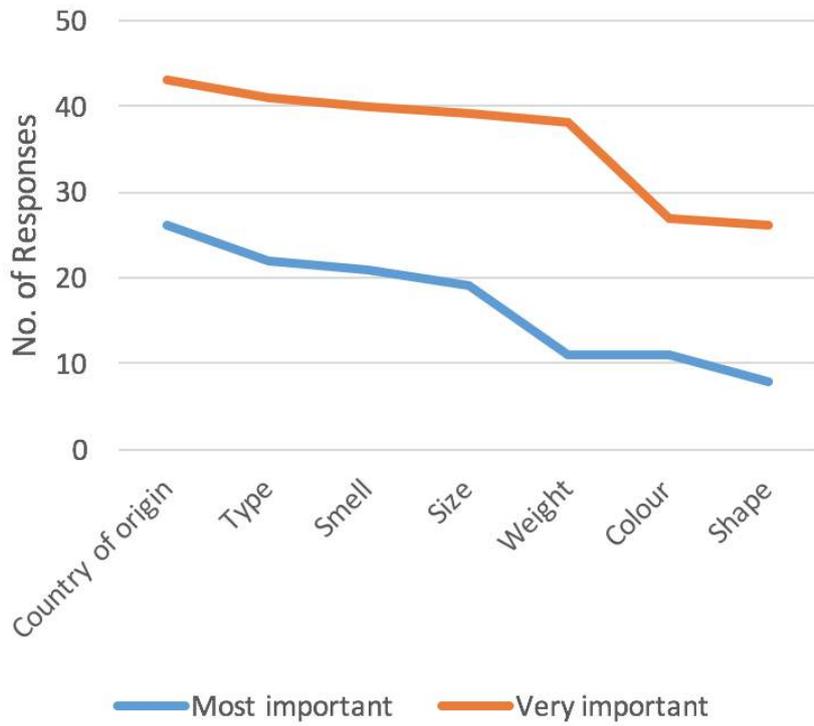
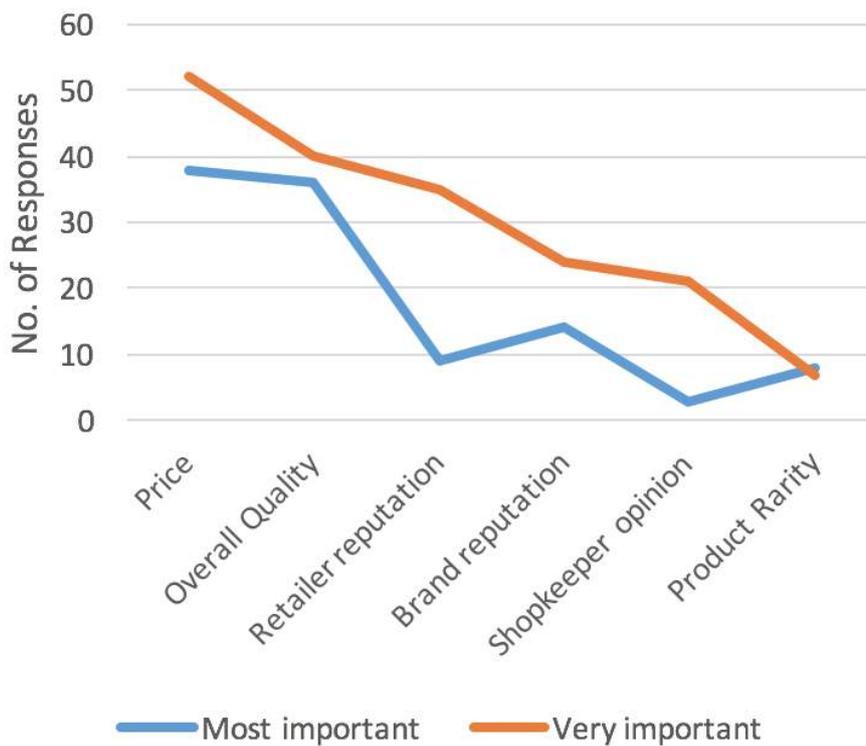


Figure 23: Relative Importance of different characteristics that influence abalone purchase decision for consumer survey respondents, most important to very important, n=153.



8.6. Consumers of dried abalone

Only 22% of respondents had experience with buying dried abalone. Amongst those that had previously bought dried abalone, they were more likely to have tried South African abalone (59%) than abalone from any other country, with 47% that had previous experience with consuming Japanese abalone, and 35% with Australian abalone. Abalone was typically consumed by this segment of respondents in Chinese restaurants (59%) and at home (32%).

“Respondents were, overall, willing to pay more for wild-caught abalone compared to farmed abalone, with 43% willing to pay more, compared to 4% who would pay less, while 16% of respondents would neither pay more or less.”

Country of origin was considered the most important characteristic of good quality abalone for this segment of respondents, although the type of abalone, smell and size were also relatively important characteristics. This segment of respondents also stated that country of origin was the factor that they were most mindful of when consuming abalone. Price and overall quality of the abalone were the most important factors in influencing their purchase decision.

On the perceived quality of abalone from different source countries, this segment of respondents rated Japanese and Australian abalone to be of higher quality (either “excellent” or “very good”) than the average respondent (65% and 68% for respondents that had purchased dried abalone, compared to 54% and 50% average for all respondents, on Japanese and Australian abalone, respectively).

For scores of the relative value for money of abalone from various countries, abalone from Japan, South Africa, and Australia were rated as the best (either “excellent” or “very good”) from this segment of respondents, compared with the overall average (44%, 47% and 35% for respondents that had purchased dried abalone, compared to 27%, 31% and 29% average for all respondents, for Japanese, South African and Australian abalone, respectively).

8.7. Awareness of wild and farmed abalone

The survey questionnaire asked about respondents’ awareness of wild and farmed abalone in the market. From the researcher’s observations, some restaurants and retail outlets do make this distinction between wild and farmed abalone, although it is not common. Findings from the consumer survey showed that 50% of the respondents who recalled consuming abalone once or more per year²⁵ knew of the existence of wild abalone, and 56% were aware of farmed abalone.

Conventional wisdom would suggest that the more a food item is consumed, the more the consumer would be knowledgeable of the thing they eat. Such a link could not be found in the survey results, with a similar proportion of respondents (45–56%) being aware of the distinction between wild and farmed abalone irrespective of how frequently they consumed abalone.

Respondents were, overall, willing to pay more for wild-caught abalone compared to farmed abalone, with 43% willing to pay more, compared to 4% who would pay less, while 16% of respondents would neither pay more or less.

²⁵ This includes respondents that had consumed abalone “more than 5 times a year”, “4–5 times a year”, “2–3 times a year” and “about once a year”.

8.8. Awareness of abalone's status and threats

The questionnaire also assessed respondents' knowledge of the status and threats to wild abalone populations, with questions that were concerned with their awareness of some abalone species becoming endangered, poaching activities in South Africa, and the availability of illegally-sourced abalone in Hong Kong. Respondents were most aware of abalone species becoming threatened (57%) than about illegal taking of abalone from the wild in South Africa (46%), and even fewer of the availability of illegally-sourced abalone in Hong Kong (35%). Since one of the questions referred to South Africa specifically, respondents that have tried South African abalone before were assessed to see if they were more or less aware about the issues identified in the three questions, but no major divergence from the overall result was evident.

Respondents' awareness on these issues does appear to be linked with their frequency of consumption. Results seem to show that the less regularly abalone is consumed, the greater the awareness of respondents about the issues highlighted in the survey questionnaire. On awareness of abalone species becoming threatened, an average 56% of respondents that consumed abalone once or more annually²⁶ had some awareness, compared to 73% of those that had not consumed abalone in the past year. On the issue of illegally-sourced abalone in Hong Kong, only an average of 33% of respondents that had consumed abalone once or more annually were aware, whilst 60% of respondents that had not consumed abalone in the past 12 months were aware of this issue.

“Respondents were most aware of abalone species becoming threatened (57%) than about illegal taking of abalone from the wild in South Africa (46%), and even fewer of the availability of illegally-sourced abalone in Hong Kong (35%).”

When asked about whether they would be inclined to change consumption behaviour in light of their awareness of these issues, respondents said they were generally less inclined to purchase and/or consume abalone once they were made aware of the issues. Half of the respondents (50%) stated they were “much less inclined” in view of abalone species becoming threatened, while 52% were also “much less inclined” considering the availability of illegally-sourced abalone in Hong Kong.

A greater inclination to reduce their consumption of abalone was found amongst respondents that consumed abalone less frequently. On the issue of some abalone species becoming threatened, 45% of respondents that had consumed some abalone annually were “much less inclined” to purchase and/or consume abalone, compared to 60% of those that have not consumed abalone in the past year. On illegally-sourced abalone in Hong Kong, responses between abalone consumers at different levels of frequency did not vary greatly. Interestingly, respondents that consumed abalone “more than 5 times a year” were more inclined to continue consuming abalone despite their awareness about these issues. Around 50% of this group were “much more inclined” and “more inclined” to consume abalone despite knowledge of threatened abalone species, and 35% of this group were “much more inclined” and “more inclined” to consume abalone in spite of learning that there are illegally-sourced abalone in Hong Kong. Hence there is a sizeable proportion of respondents that appear not to be influenced by information about illegal and/or unsustainable consumption of abalone, and would continue to consume regardless.

²⁶ This includes respondents that had consumed abalone “more than 5 times a year”, “4–5 times a year”, “2–3 times a year” and “about once a year”.



Dried abalone on sale in Hong Kong © Wilson Lau/TRAFFIC

9. DISCUSSION

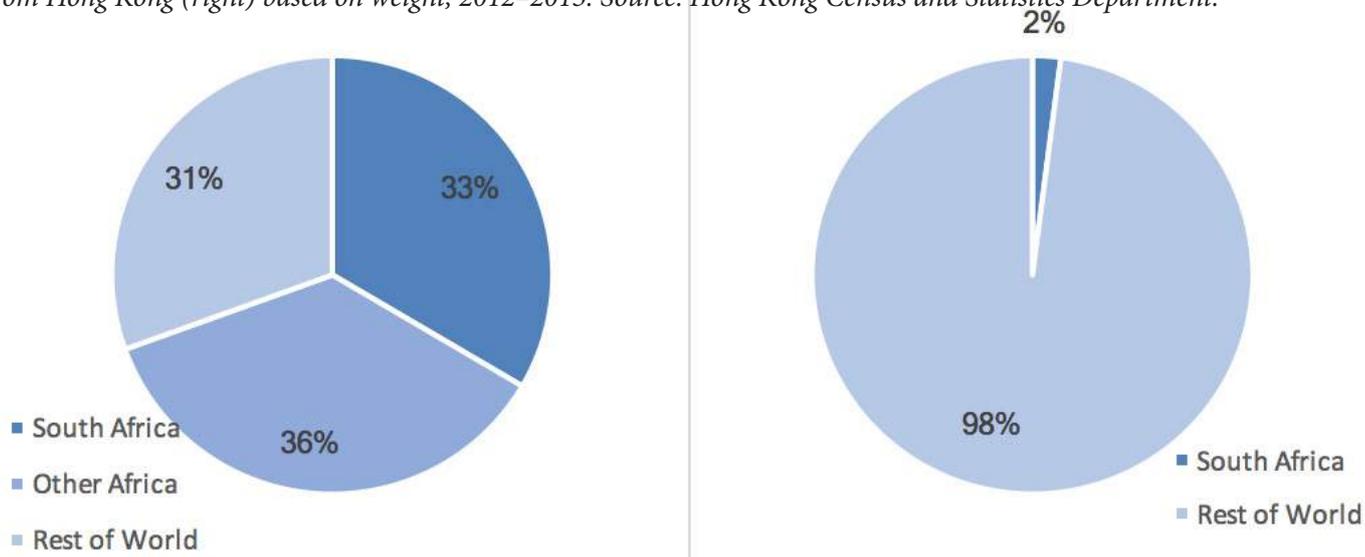
A few key questions are addressed here in order to assess the depth to which the sourcing and sale of poached abalone is entrenched in Hong Kong's markets. Drawing on the data analyses presented throughout the report, the dynamics of trade and the positioning of South African abalone in the Hong Kong market are discussed, providing insight into consumer preferences for South African dried abalone. The challenge of illegally-sourced abalone being openly and legally traded in the Hong Kong market is highlighted, and potential interventions are outlined.

9.1. Historical patterns of demand and supply of *H. midae*

South Africa is the leading trading partner for dried abalone imports to Hong Kong, contributing 33% of all imports during 2012–2015. Considering the substantial import of dried abalone from other African countries, which are also assumed to be trading in *H. midae*, the combined import of *H. midae* from the various countries constitutes almost two thirds of all dried abalone imported into Hong Kong (2012–2015) (Figure 24). By contrast, only 2% of Hong Kong's total dried abalone re-exports are comprised of *H. midae* (Figure 24). This would suggest that either there is considerable under-reporting of *H. midae* re-exports, or a high rate of local consumption of *H. midae* in Hong Kong. Market surveys with traders suggest, however, that a considerable portion of their business involves trade with overseas buyers. Furthermore, while imports are purportedly being sourced from a range of African countries, there are only dried abalone re-exports from South Africa and none from other African source countries.

“Only 2% of Hong Kong’s total dried abalone re-exports are comprised of *H. midae*. Either there is considerable under-reporting of *H. midae* re-exports, or a high rate of local consumption of *H. midae* in Hong Kong.”

Figure 24: Percentage of dried abalone imports to Hong Kong (left) and percentage of dried abalone re-exports from Hong Kong (right) based on weight, 2012–2015. Source: Hong Kong Census and Statistics Department.



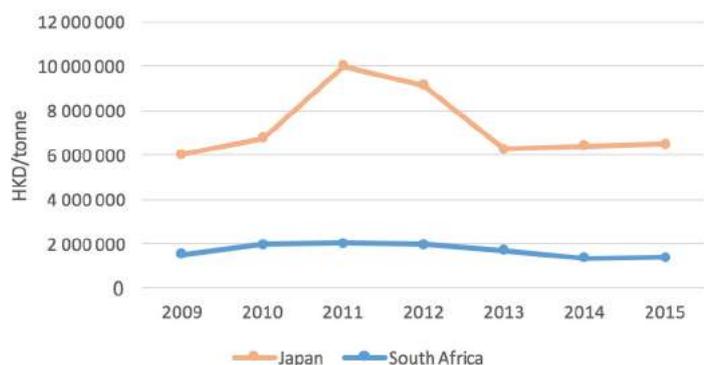
Similarly, it was almost impossible to find abalone from other African countries in dried seafood outlets, while dried abalone labelled as “South African” was found everywhere. This contrasts with market surveys reported in To *et al.* (2006), where the authors identified dried abalone from other African countries as a distinct “brand” or abalone type in the market. The fact that these products were not identified in markets surveys for this report may be an indication of the way in which dried abalone from other African countries gets reclassified once it arrives in Hong Kong.

A variety of factors have influenced the trade dynamics of dried *H. midae* in Hong Kong. The 2012 anti-graft campaign in mainland China is frequently cited by traders as an important factor influencing the recent downturn in the overall trade of dried abalone. Prior to the anti-graft crackdown, government officials frequently purchased high-value items, and were keen buyers of luxury products and hosts of extravagant banquets where expensive food products such as abalone and shark fins would be served. Traders believed the self-imposed austerity measures put an end to banquet style dining, as officials feared being seen as taking money from State funds. Hong Kong traders noted that profits from the dried abalone trade had dropped sharply, but their businesses were sustained by local sales. This is somewhat reflected in trade data, where imports of *H. midae*, and dried abalone overall dipped in 2012 from the previous year, although by 2013 dried abalone imports began to increase again.

“It was almost impossible to find abalone from other African countries in dried seafood outlets, while dried abalone labelled as 'South African' was found everywhere.”

Another potential cause of fluctuations in demand was Japan’s tsunami and the nuclear disaster in March 2011, which apparently destroyed several abalone operations on Japan’s east coast (The Yomiuri Shimbun/ANN, 2011). Fears over the availability and safety of Japanese dried abalone after the 2011 nuclear disaster appeared to be short lived. While there was a discernible dip in imports of Japanese dried abalone from 2011 (~43 tonnes) to 2012 (~20 tonnes), imports recovered to their previous levels in subsequent years (~41 tonnes in 2013, ~35 tonnes in 2014, and ~37 tonnes in 2015). The disaster had an opposite effect on the price of Japanese abalone, with a sharp increase evident in 2011 and 2012 for dried abalone (Figure 25). Panic purchases of Japanese dried abalone in Hong Kong occurred immediately following the nuclear disaster (Wang and Xu, 2011), causing prices to rise. This high demand may have persisted into 2012 due to the perception of limited stocks in the future, and the availability of remaining stockpiles that were distinguished as being “uncontaminated” by possible radioactive fallout (Hall and Pierson, 2011).

Figure 25: Declared import prices (HKD) per tonne of Japanese and South Africa dried abalone, 2009–2015. Source: Hong Kong Census and Statistics Department

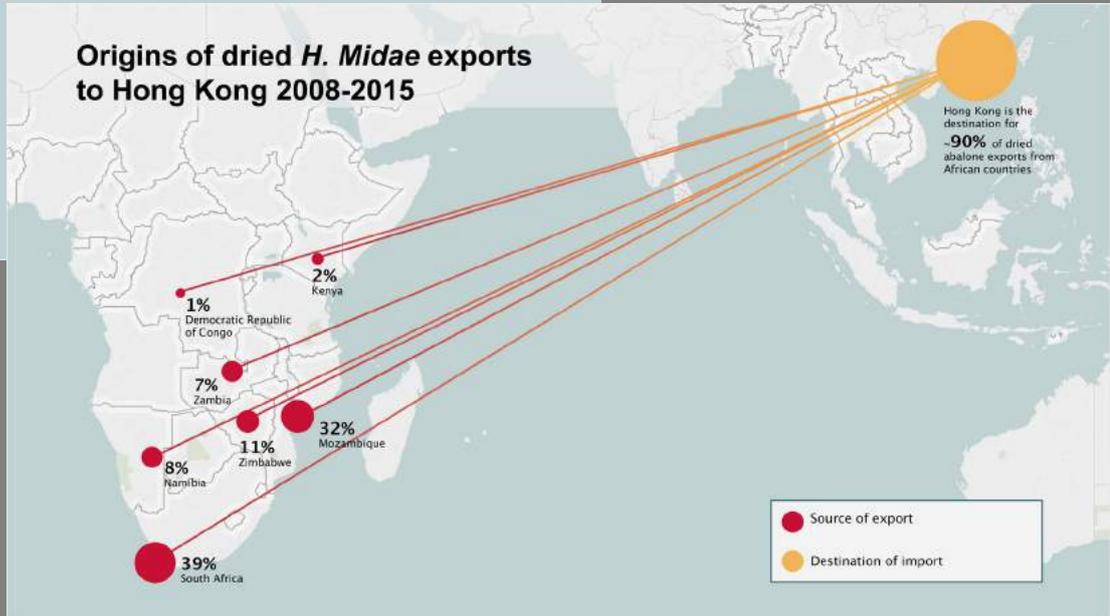


Origins of dried *H. Midae* exports to Hong Kong 2000-2007



Map 2: Hong Kong imports from source countries in Africa between 2000–2007
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Origins of dried *H. Midae* exports to Hong Kong 2008-2015



Map 3: Hong Kong imports from source countries in Africa between 2008–2015
©TRAFFIC

One of the biggest shifts in dried abalone imports, as indicated in Hong Kong’s trade statistics, was the change in imports from source countries in Africa. Between 2000 and 2007, the majority of dried abalone imported from Africa was sourced from South Africa (86% in 2007). This dramatically changed in 2008, when only 29% of dried abalone from Africa was sourced from South Africa, with a parallel increase in imports from other African countries (see Figure 8). The timing appears to correspond with the CITES Appendix III listing by South Africa in 2008 and may have influenced the shift in source countries from Africa for Hong Kong’s dried abalone imports.

The closure of South Africa’s wild abalone fisheries to commercial harvesting in the years following (2008 and 2009), and its resumption in 2010, with a much lowered total allowable catch of 150 tonnes (Bürgener, 2011), possibly led to traders persisting with the trade flows from South Africa to other African countries before re-exporting to Asia. Zimbabwe and Mozambique became important exporters of dried abalone from 2008, and recently, so has Namibia and Zambia (2014–2015). In all, the shift in exporting location was rapid but impressively achieved with only a slight decrease in overall exports of dried abalone to Hong Kong between 2007 and 2008. Given the additional effort required to transport stocks and possibly shift production and processing out of South Africa, it might be plausible to assume that some degree of pre-existing networks was already in place. Indeed, To *et al.* (2006) had, in their 2003–2004 market surveys, noted the availability of fei zhou bao, or “African abalone” in the market (which was distinct from da wang bao, or South African abalone), suggesting that Hong Kong importers had long been sourcing dried South African abalone from other African countries. During this period (2003–2004) Hong Kong had imported dried abalone from a number of African countries, including South Africa, Zimbabwe, Mozambique and Namibia, which would suggest that *H. midae* has been laundered from South Africa to neighbouring States for some time.

Knowledge of these changes, and the expanding source countries from which *H. midae* was being imported do not appear to have registered amongst local traders in Hong Kong. Abalone is often sourced through sales agents based in Hong Kong, so their lack of awareness about this is understandable. Further, since there is virtually no market awareness of dried abalone from other African countries, there is little to gain for local traders to insist that their *H. midae* stock is

imported from countries beyond South Africa. Results from the consumer survey reinforce this, with 96% of respondents admitting that they had not had experience with consuming abalone from African countries other than South Africa.

9.2. Is demand for dried abalone driven by mainland Chinese consumers?

To identify likely destinations for re-exports and possible obstacles in making cross-border transactions, some abalone wholesale traders were asked whether they would take orders and deliveries from outside of Hong Kong. These traders almost exclusively mentioned orders by clients in mainland China.

Free trade arrangements between Hong Kong and mainland China, under the Hong Kong-China Closer Economic and Partnership Arrangement (CEPA), has meant that dried abalone from abroad can be imported into Hong Kong and re-exported to mainland China without tariffs imposed. If China-based traders were to import dried abalone direct from South Africa, a 5% tariff would be applicable (General Administration of Customs of the People's Republic of China). Cost advantages also make higher-value imported goods, such as abalone, appealing to mainland Chinese tourists visiting Hong Kong. A 17% Value-Added Tax on imported products applies in mainland China, whilst Hong Kong does not impose a sales tax. Hence, imported products sold in Hong Kong would be significantly cheaper than the same products sold in mainland China.

For these reasons, one would expect Hong Kong to have a sizeable abalone re-export trade with mainland China. Customs trade records, however, do not support this. During the 16-year period (2000–2015), mainland China was the fifth largest dried abalone re-export market overall for Hong Kong. Recent trade has reduced to almost insignificant levels, with re-exports of ~100 kg of dried abalone between 2012 and 2015, compared to its peak in 2008, where ~15 tonnes were re-exported. Meanwhile, as re-exports to mainland China declined from 2012, re-exports to Viet Nam rose markedly between 2012 and 2015, with an average ~97 tonnes of dried abalone re-exported to Viet Nam annually.

“The links between mainland China, Hong Kong and Viet Nam require further research, including trade routes for dried abalone entering Viet Nam.”

Studies that analysed the trade in other dried seafood (Fabinyi, 2015; Wu, 2016) also found a similar growth in re-exports from Hong Kong to Viet Nam, while direct trade between Hong Kong and mainland China has reduced. Studies of traders in Beijing have indicated that seafood consignments are sometimes exported from Viet Nam to Nanning, in China's Guangxi province, before being transported up north (Fabinyi and Liu, 2016). This being said, investigations into wildlife smuggling have found the border town of Mong Cai, on the border of Viet Nam and mainland China, to be particularly well disposed to facilitate illegal cross-border trade. 90% of all products traded in Mong Cai entered through illegal crossing routes instead of the official border bridge (Robertson, 2013). This may suggest that dried seafood products can be smuggled in larger quantities through the China–Viet Nam border. The links between mainland China, Hong Kong and Viet Nam require further research, including trade routes for dried abalone entering Viet Nam.

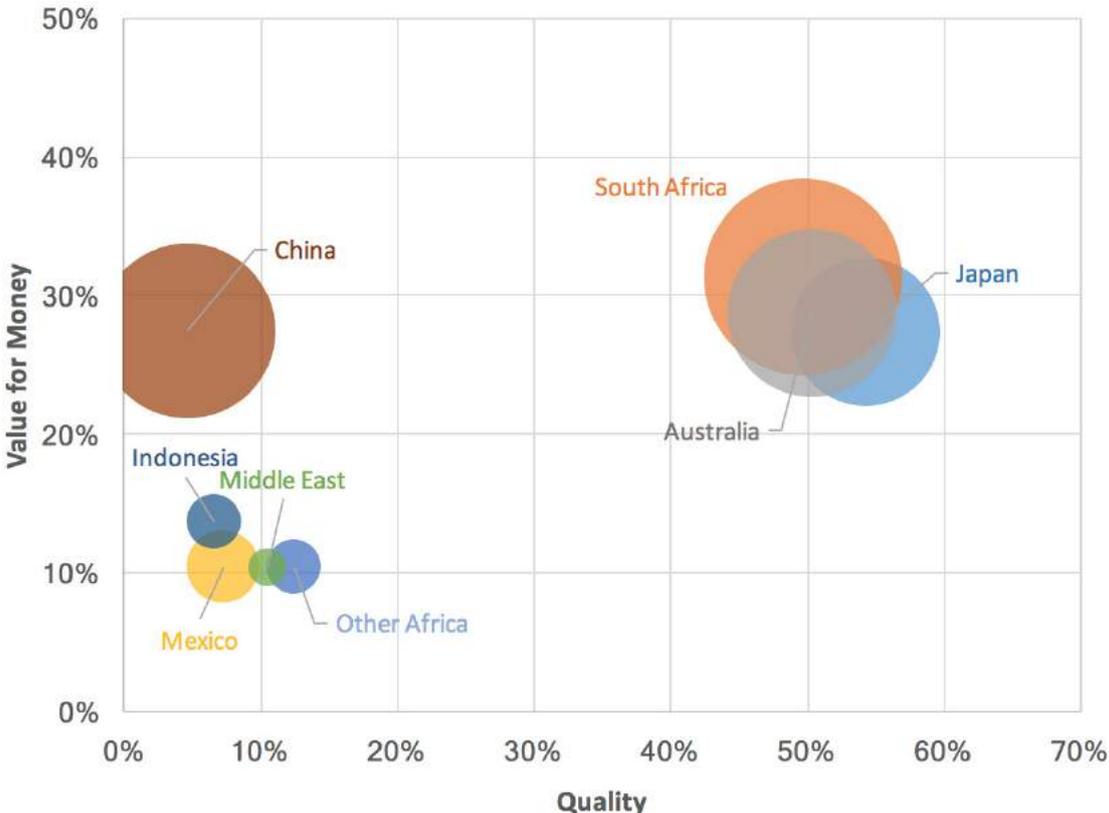
Trade with mainland China appears to be flowing in the opposite direction. Between the period 2012 and 2015, 29% (~156 tonnes) of all dried abalone re-exports from Hong Kong were sourced from mainland China, which is the second greatest source country for Hong Kong's dried abalone re-exports after Indonesia. Farmed abalone production in mainland China is the largest in the

world, with many farms producing abalone for the export market, particularly Japan (Cook, 2014). It is possible that some of this farmed abalone is exported to Hong Kong for re-export to other countries. It is unclear, however, where this amount of China-sourced dried abalone comes from in the first place. Trade records only show ~55 tonnes of dried abalone that were imported from mainland China into Hong Kong during 2012–2015. In fact, during the entire 16-year period (2000–2015), only ~105 tonnes of dried abalone have been imported from mainland China, which is well below the total re-export of China-sourced dried abalone from Hong Kong.

One possibility is that imported live or frozen abalone from mainland China is being dried in Hong Kong, which would explain the high quantity of dried abalone being re-exported. Approximately ~7,000 tonnes of live and frozen abalone was imported from mainland China between 2012 and 2015. TRAFFIC is not aware of this practice, nor was this asked during market surveys for this report. Further research is needed to determine whether this is indeed taking place in Hong Kong. The same cannot be said of Indonesia, however, as no imports of abalone in any form were reported in this period.

Another explanation could be if dried abalone from various source countries is combined for re-export, but declared as originating from China and Indonesia. By declaring it as the cheaper product, importers at the destination country would pay a lower tariff. This is apparently a common practice for traders in dried seafood products (Fabinyi, 2015), and could conceivably be done with dried abalone since they are broadly a similar shape and appearance to the non-expert eye. The scale of this trade, possibly across multiple commodities, warrants in-depth investigation by Hong Kong’s Customs and Excise Department, perhaps in collaboration with its counterparts in mainland China and Viet Nam.

Figure 26: Positioning of abalone from different countries of origins on quality and value for money, based on scores from the abalone consumer survey. **Note:** Ratings of each country’s abalone on the two factors were based on “excellent” and “very good” scores that respondents gave when surveyed. The size of each bubble represents whether survey respondents have consumed abalone from the respective countries, with the bigger bubble showing a greater number of respondents that had tried it.



9.3. What explains the dominance of *H. midae* in the Hong Kong dried abalone market?

Surveyed respondents stated that “price” and “overall quality” were the primary determining factors influencing their decision when purchasing abalone. In turn, the best indicator of quality for respondents was the abalone’s “country of origin”, which is also the aspect that respondents are most likely to notice when consuming abalone. By comparing these factors (in Figure 26), some indications about consumer preferences and purchase decision for abalone can be inferred.

Two clusters are clearly apparent from Figure 26, with scores for South African, Japanese and Australian abalone perceived to be superior with regards to quality and value for money. The advantageous scores for South African abalone on both quality, where it has the second highest scores, and value for money, where it has the highest scores, suggest that it would be one of the preferred choices for Hong Kong abalone consumers.

This apparent preference for abalone from South Africa, Japan and Australia appears also to correlate with respondents’ past experience with consuming abalone from these three countries (represented by the bubble size in Figure 26). Consumers’ experience, or conversely the availability of certain abalone in the market, could well be an important third factor influencing consumer purchase and consumption decisions. One example of this is abalone from the Middle East. It scores poorly on the consumer survey and, although few have tried it before, it is considered favourable in terms of taste and texture compared to South African abalone.

“Consumer preferences could be altered if supply dynamics for the different abalone species were to change—in combination with associated marketing initiatives.”

Equally, market availability might also explain South African abalone’s high scores. More than half of all declared dried abalone imports to Hong Kong are made up of abalone from South Africa and other African countries, all of which are likely to be imports of *H. midae* (see Figure 6). It also appears to be the most prevalent, based on the researcher’s observations of abalone displayed in dried seafood outlets in Hong Kong.

One implication of this finding is that market share in Hong Kong’s abalone market is linked to availability. That consumer preferences could be altered if supply dynamics for the different abalone species were to change—in combination with associated marketing initiatives—suggests that South African dried abalone’s dominant positioning at present is not in fact impenetrable. Indeed, the current market advantages may be challenging to maintain for South Africa’s abalone producers, as that would likely require sustaining current levels of production, a prospect that is inhibited by the heavily depleted wild stocks (DAFF, 2014).

9.4. To what extent is the illegal sourcing of *H. midae* in Hong Kong known by traders and consumers?

Awareness about the possibility of illegality in imported abalone to Hong Kong was predictably lower amongst consumers compared with traders. The majority of abalone traders that were asked about any illegal dimensions to the abalone trade did know of illegal activities, in one form or another. Consumers were, in contrast, much less aware. In the survey of Hong Kong residents, only 19% of respondents were firmly aware, and 27% stating that they “may have heard of” the illegal

harvesting of abalone from the wild in South Africa. Even fewer knew of illegally-sourced abalone available for sale in Hong Kong, with 15% that were aware, and 20% who “may have heard of it before”.

Awareness of Hong Kong traders about the nature of poached abalone seems to fit with existing knowledge in the published literature, although with a tendency towards generalizations. For example, traders discussed the involvement of local communities that were involved in abalone poaching, with a reference to a generic group of “locals” that had in-depth knowledge of abalone fisheries. In de Greef and Raemaekers (2015), the distinction is made between traditional fishing communities in Eastern Cape, and new entrants with no history of fishing that are now involved in poaching in the Western Cape.

Steinberg (2005) examined in some detail the links between Chinese criminal groups and local gangs that handle poaching activities, and the practice of bartering drugs for poached abalone. Further insights into the nature and functions of these groups have been published, linking local poachers with buyers and middlemen that connect the chain with criminal syndicates (De Greef and Raemaekers, 2014). Hong Kong traders surveyed for this report expressed an awareness about a Chinese presence and involvement of criminal syndicates in the trade. Although largely out of sight, one trader portrayed such syndicates as having monopolistic control over the trade in poached abalone, with the capacity to control prices and adjust trade quantities in response to demand from East Asia.



Cantonese abalone dish with shells © Benjwong/Wikimedia

The surveyed traders appeared fairly indifferent to the criminal elements of the dried abalone trade, perhaps due to the lack of recourse in local laws for the sale of illegally-sourced abalone. Since illegality at present may refer to unlicensed catch, illegal trade and tax evasion in South Africa, one trader suggested that it should not prevent consumers in Hong Kong from buying them, given that the essential quality of the abalone remains the same as legally-sourced ones.

The abalone trade chain, from coast to plate, is structured like an hourglass. Numerous fishers and processing companies are located at source, including poaching groups and illegal processing operations, while at the consumer end, an extensive industry of abalone wholesalers and retailers distributes supplies to restaurants, hotels, and homes. The trade narrows at the centre, as South African abalone suppliers apparently work through trading companies and sales agents based in

consumer countries, managing the flow of abalone imports and redistributing this to the many local wholesalers. These individuals and companies could be a vital bottleneck in the trade chain, given the power and control they could wield to South African suppliers—both legal and illegal ones—and the consumer base.

9.5. Have past trade and related interventions been adequate?

9.5.1. CITES listing

The South African Government's decision to list *H. midae* in CITES Appendix III in 2007 was driven by the consistent, high levels of illegal abalone harvest and trade, despite a range of national enforcement efforts to address the issue. A CITES listing was seen as an opportunity to enlist the co-operation of other countries in preventing unsustainable or illegal exploitation of *H. midae*, through strengthened trade controls in key importing markets such as Hong Kong, China, Taiwan and Japan.

The listing was withdrawn by the South African Government in May 2010 not because the illegal harvest and trade had been addressed but due to difficulties in the administration of CITES permits in South Africa, which were having a negative impact on legal aquaculture operations, processors and exporters. The failure to endorse abalone export permits at South African ports of export was considered the biggest limiting factor in the successful implementation of the listing. Failure to endorse permits was reportedly caused by a lack of capacity amongst Customs officials of the South African Revenue Services (SARS) stationed at the country's various sea, land and airports (Bürgener, 2010). This was primarily linked to the logistics associated with the export of live abalone, which require that the consignments complete the international trip within a very tight timeframe to prevent the animals from dying. In many cases flight departures and transfers from domestic to international flights take place late at night or very early in the morning when the air temperature is cooler. Permit endorsement under such conditions was beyond the capacity of SARS. The listing had a negative effect on the South African legal abalone sector—with CITES permit related administrative delays in importing countries resulting in a number of live abalone consignments having to be destroyed. Implementation was made more challenging by the fact that no assistance from the South African Government or identification materials were offered to importing countries, and there were few internal and external consultations in regard to the CITES listing, including the intention to delist *H. midae* from CITES Appendix III (Bürgener, 2010).

“The CITES listing was withdrawn in May 2010 not because the illegal harvest and trade had been addressed but due to difficulties in the administration of CITES permits in South Africa.”

The listing seems to have had a limited impact on abalone poaching, as feedback from government and industry suggested that the effect on illegal trade only lasted for three to four months (De Greef and Raemaekers, 2015). It is regrettable that the listing was not properly implemented by South Africa as it is not known how effective CITES could have been as a regulatory tool.

Since the delisting in 2010, poaching and illegal trade of abalone appears to have persisted, and even increased. Estimates suggest 2015 had the second highest number of poached abalone in trade during the period 2000–2015, which was only marginally lower than the 2004 peak (Bürgener,

2016). The current high levels of abalone poaching and illegal trade in South Africa should sound the alarm once again for urgent action and possibly new approaches to tackle this unsettling trend.

Despite the setbacks in the previous CITES listing, a regulatory system that is capable of restricting the illegal international abalone trade across producer, transit and market countries is still urgently needed. The inclusion of *H. midae* within the appendices of CITES has the potential to play a role in addressing the international trade in illegally-sourced abalone, but only if comprehensively implemented in South Africa after full consultation with government and industry stakeholders, and with the necessary support to transit and market States.

Box 2: Brief overview of CITES and its appendices

Exploitation of animal and plant species for the purposes of international trade can directly cause the over-exploitation of populations, leading in some cases, to a heightened risk of extinction. CITES, which entered into force in 1975, is an international agreement, intended to bring co-operation between Member States, or Parties, in an effort to ensure that international trade in wild animals and plants does not threaten their survival in the wild.

Once a species is covered by CITES, controls are put in place for the import, export, re-export and introduction from the sea of the listed species through a licensing system, which in turn is administered by one or more of the Management Authorities designated by each Party. One or more Scientific Authority may also be designated by Parties to advise Management Authorities on the effect of trade on the species. Depending on the level of protection needed, species that are covered under CITES are listed within one of the three appendices (CITES Convention Article II).

- Appendix I includes the most endangered species threatened with extinction. International trade is prohibited by CITES for Appendix I specimens except when the purpose of the trade is non-commercial, e.g. for scientific research (CITES Convention Article III).
- Appendix II lists species that may not be threatened with extinction, but may become so without proper controls over its trade. International trade needs to be authorised by Management Authorities through the issuing of export permits or re-export certificates.
- Appendix III includes species whose trade is already regulated in at least one country, but is deemed to require the assistance of other CITES Parties in controlling the trade, in order to prevent further unsustainable and illegal exploitation (CITES Convention Article II, para 3).

Source: CITES, viewed on 6 August 2017

Table 2: Summary of the main differences between CITES Appendices II and III. Source: Sant (2006)

Provision	Appendix II	Appendix III
Listing process	Proposal requires 2/3 majority support to be accepted; proposals are generally to be decided upon at meetings of the Conference of the Parties	A Party may unilaterally list a species at any time
Introduction from the Sea	Provisions apply	No provision
Non-Detriment Finding	Required	Not required
Nature of listing	By species; species of fauna cannot be annotated to exempt certain parts and derivatives from the provisions of the Convention parts and derivatives (other than whole specimens) must be specifically included by “annotation” for species of flora	By species but may annotated to include only certain parts or derivatives of a species of fauna or flora
Reservation	Only within 90 days of the listing Only in respect to the species as a whole	Can be taken at any time Can be taken in respect to any particular part or derivative
Look-alike species	Look-alike species may also be listed	No provision for the listing of look-alike species
Personal and household effects	Included under certain circumstances	All personal and household effects are exempt

The following is a discussion of the provisions of CITES Appendix II and III and how these would apply to trade in *H. midae*.

Appendix II enables an importing State only to allow the trade in the listed species with the presentation of an export permit or re-export certificate. Importing States are required to refuse the import of specimens of species listed in Appendix II without such documents, creating a barrier against illegally-sourced specimens. The Scientific Authority of the South African Government will be required to develop a Non-Detriment Finding, to determine the legal limits that should be placed on the export of the species. Appendix II also allows look-alike species to be listed. There are a number of reasons for allowing this, including the prevention of laundering as a non-listed, look-alike species, and to minimise the possibility that restrictions imposed on one species could drive the over-exploitation of the look-alike species. For *H. midae*, however, lookalikes are less of a concern, as the illegal abalone trade between some African countries and Hong Kong involves one abalone species. It is therefore less of an issue of lookalikes, but rather a smuggling and false declaration problem which should be dealt with by improved law enforcement in South Africa and neighbouring States.

In contrast to listing species within Appendix II of CITES, which requires support at a Conference of the Parties to the Convention of two thirds of members present and voting, species can be listed in Appendix III unilaterally by a range State of the species at any time. Wide consultations with other range and market States is recommended by CITES before moving to include a species in Appendix III (Resolution Conf. 9.25). Furthermore, there is no requirement for exporting Parties that list the species in Appendix III to make a Non-Detriment Finding.

“The only other country with known *H. midae* abalone production is Namibia.”

Export permit requirements only relate to the State submitting the listing to Appendix III. In such cases, specimens that are bred in captivity, in compliance to CITES requirements (Resolution Conf. 10.16 (Rev.)), can be issued with a certificate of captive breeding by the CITES Management Authority in lieu of an export permit. For exports of wild specimens of the same species from countries other than the country that listed the species, a Certificate of Origin will need to be produced by the exporting State. Unlike a CITES export permit, issuance of a Certificate of Origin does not involve a determination that specimens were legally obtained, and provides the possibility that illegally-sourced specimens could still enter the international trade through another range State. The only other country with known *H. midae* abalone production is Namibia, where a Certificate of Origin or Certificate of Captive Breeding may be issued for export. Exports of *H. midae* consignments from other African countries such as Mozambique or Zimbabwe, from where Hong Kong imports a large percentage of *H. midae*, would require proof of an export permit from the specimen's origin first, i.e. South Africa, before a re-export certificate can be issued.

However, the problem persists when specimens of an Appendix III species are smuggled into a country that was not responsible for the CITES listing, and are subsequently laundered as a legitimate product of that country. If the CITES Management Authority (MA) of this country were then asked to issue a Certificate of Origin to facilitate the transport of this product (of an Appendix III species) to a third country, such a certificate could well be produced without checks on the legality of the product's origins. As smuggling of *H. midae* out of South Africa



Dried abalone being weighed in Hong Kong market © Wilson Lau/TRAFFIC

and into neighbouring countries has been occurring for more than a decade, this could be a loophole that illegal traders may attempt to exploit. This could be pre-empted by holding information sessions and working with CITES MAs in all of South Africa's neighbouring countries, and key importing States, prior to an Appendix III listing. It should be made clear that as *H. midae* is endemic to South Africa, an export permit is always required for the trade in Appendix III listed *H. midae* from South Africa, and that a Certificate of Origin should never be issued, or accepted, by their country (with the exception of *H. midae* from Namibia, which has a comparably small annual farmed production; a Certificate of Origin would be required for trade in Namibian *H. midae*). Close subsequent monitoring of CITES trade data could also help to uncover any cases of unwarranted issuance of Certificate of Origin.

An Appendix II listing may be more effective in countering such laundering practices, as CITES Parties are required to assess the legal origins of all specimens covered under the listing before issuing an export permit. Such a permit would not be permissible for a laundered product of an Appendix II species, other than perhaps through forged documents and false claims of origin.

One benefit of an Appendix III listing is the ability to make annotations that allow for the listing to only apply to certain parts or derivatives or traded forms of the species. In contrast, an Appendix II listing applies to the species as a whole, without exemptions. An Appendix III listing of *H. midae*, annotated to make it only applicable to dried specimens, may be sufficient as the majority of poached abalone is traded in dried form (De Greef and Raemaekers, 2014). This annotated listing could help bypass a major issue of the previous CITES listing which had negatively affected live abalone exporters, for which timely endorsement of CITES permits is a necessity, while dried abalone are unaffected by Customs delays. Nevertheless, good planning and sufficiently resourced implementation is a key prerequisite to effective CITES appendices implementation, as is internal consultations between government departments in South Africa, and external consultations with importing States such as Hong Kong.

The South African Government should therefore determine whether an Appendix II or III listing is more appropriate for effective control of the trade in *H. midae*. This decision needs to

be informed by widespread discussions with legal abalone manufacturers and traders, and with consumer and transit countries/territories, prior to a listing proposal, which could also serve as a prologue to eliciting their future assistance in implementing such a CITES listing.

9.5.2. Health certificates

The Hong Kong Government considers marine products to be a high-risk food item, noting the risk of chemical and bacterial contamination during harvest, handling and transport processes. Yet despite the acknowledged risks to public health, health certificates issued by the country of origin for seafood products imported into Hong Kong are not a mandatory condition of import. The only regulated food items for which a health certificate is compulsory are imported frozen and chilled game, meat, and poultry, as well as eggs, under the Imported Game, Meat, Poultry and Eggs Regulations (Cap. 132AK). By contrast, traders of imported seafood are merely “encouraged” to obtain a health certificate (Centre for Food Safety, 2012). In the event that a health certificate for a seafood item could not be presented during border inspection, which is usually requested based on risk assessment, the Food and Environment Hygiene Department is legally bound to take samples of the product consignment for bacteriological and chemical analysis, as outlined in Section 62(1) of the Public Health and Municipal Services Ordinance (Cap. 132).

Other countries appear to be taking the need for documented guarantees for food imports more seriously. The EU has specific requirements about the safety of imported food, and requires health authorities in exporting countries to make inspections of food manufacturing processes to ensure it meets the requirements specific in the Directives of the EU Council, before issuing a health certificate (Directorate-General for Health and Consumers, viewed on 25 January 2017). Importantly, these health certificates are mandatory, and EU importers are obliged to present the health certificate alongside other trade documentation when the consignment enters the EU border. Such preconditions could be an effective safeguard against health risks associated with abalone sourced from illegal processing facilities.



Chinese food in street market of Hong Kong © Wilfredo R. Rodriguez/Wikimedia



Abalone on sale in Hong Kong © Wilson Lau/TRAFFIC

10. CONCLUSION & RECOMMENDATIONS



Live *H. midae* © Markus Bürgener/TRAFFIC



Dried *H. midae* © Markus Bürgener/TRAFFIC

Favourable qualities in *H. midae* have led it to become a preferred source of dried abalone in Hong Kong. Demand, and price, for abalone have risen substantially over the past decade, which has enabled numerous people in South Africa to benefit financially, luring new entrants and traditionally poor coastal communities towards the trade (de Greef, 2013). These trends have, however, come at a cost: wild abalone resources in South Africa have been decimated by poaching along the South African coastline, while national management and international co-operation have been inadequate in controlling what has become a harvest in South Africa that is substantially through illegal fishing.

This cost is not one that is borne by Hong Kong and other Asian consumer countries, distant as they are from the troubles at source. However, it has also been recognised that effective solutions to resource management problems must encompass the involvement and assistance of consumer countries, where interventions could affect consumer access to legal and illegal supplies. This report's findings concur with this: government policies to curtail excessive spending have had an impact on demand for luxury food items such as abalone (e.g. mainland China's anti-graft campaign) but appears to have a less desirable effect on the supply-side (e.g. poaching persisting in spite of a range of law enforcement and other interventions by South Africa). Past interventions to control the harvest and trade in South Africa's wild-caught abalone have only been effective in so far as to illustrate that despite the many, diverse attempts to address the illegal abalone trade, domestic efforts will continue to fall short without international support. International efforts through CITES would benefit from a more targeted and collaborative approach, one that more actively engages consumer and transit countries/territories of the *H. midae* trade, especially Hong Kong.

“Wild abalone resources in South Africa have been decimated by poaching along the South African coastline, while national management and international co-operation have been inadequate.”

Beyond CITES interventions, there is a distinct lack of local measures to prevent the flow of illegal abalone in Hong Kong's market. Although Hong Kong authorities do not yet have the legal remedies to interdict illegally-sourced abalone within its jurisdiction, the need for such remedies is strikingly clear. The poaching and illegal trade of South Africa's abalone denies the benefits of a public resource from the broader community, and more importantly represents an act of crime, one often spearheaded by criminal syndicates (Steiner, 2005; Goga, 2014; De Greef and Raemaekers, 2014). Interventions that deter poaching and illegal trade of abalone, that would support the

long-term sustainability of abalone resources, would ultimately be in the interest not only of the legal abalone sector in South Africa but also of Hong Kong traders and consumers. For those in consumer countries, the benefits directly affect future consumption—a well-regulated industry that supports sustainable harvesting of abalone provides assurances of continued supply. It also ensures that the consumption of South African abalone would not contribute to unsustainable exploitation in South Africa.

“Interventions that deter poaching and illegal trade of abalone, that would support the long-term sustainability of abalone resources, would ultimately be in the interest not only of the legal abalone sector in South Africa but also of Hong Kong traders and consumers.”

Hong Kong does not adequately protect non-local threatened species in domestic laws. This is of significant concern given the impact the city has, through trade, on the survival of some species. The trade in *H. midae* provides an important case in point for granting legal protection in Hong Kong for endangered species threatened by trade, and to engage and incentivise local traders in pathways towards legal and sustainable use of wildlife.

The current report outlines a number of recommendations that should be considered, and the key partners to include:



Dried abalone on sale in Hong Kong, labelled as "sweet-centered" © Markus Bürgener/TRAFFIC



RECOMMENDATION 1

10.1. Support for a CITES listing

A CITES listing provides the opportunity for a co-ordinated approach between source, transit and consumer countries and territories in addressing the over-exploitation of South African abalone through international trade. The South African Government should determine an appropriate listing of *H. midae* into a CITES appendix that achieves effective trade control of the resource while practical to implement. Ensuring departmental capacity in the South African Government to issue and endorse CITES permits this time around, and proactive co-operation with authorities in consumer countries such as Hong Kong about a timely ratification of the CITES listing and recognising relevant trade documents at its borders, will be critical (Willock *et al.*, 2004; Bürgener, 2010). The importance of reaching out to other abalone trading countries/territories cannot be understated, as without their compliance to enforce the documented proofs of legality at their borders, the deterrent effect on illegal abalone traders will be lost.

In turn, the Hong Kong Government should reach out in support of a CITES appendix listing for *H. midae*, if the South African Government decides to do so. However, closer co-operation between the two governments, particularly prior to a potential CITES listing, could help expedite the implementation process, such as the development of identification materials, training of local Customs, Fisheries and other officials, and creating awareness amongst Hong Kong importers, wholesaler and retailers. Continued co-operation between the Hong Kong and South African governments will be necessary. Monitoring and regular assessments will be required, assessing whether the relevant documentation is being used by traders, and that the CITES listing is having an effect on halting the flow of poached South African abalone.

Recommendation 1	Key Partners
South Africa should notify the CITES Secretariat of the inclusion of <i>H. midae</i> within Appendix III of the Convention,, with an annotation that the listing only applies to the species in dried form, and/or; Consideration by CITES Parties to include the species within Appendix II through the submission of a proposal to amend Appendix II of the Convention. Inclusion within the CITES appendices will require close co-operation between South Africa, Hong Kong and other abalone importing countries/territories to ensure a comprehensive implementation process.	DEA, AFCD, CITES Secretariat, abalone famers and exporters in South Africa



RECOMMENDATION 2

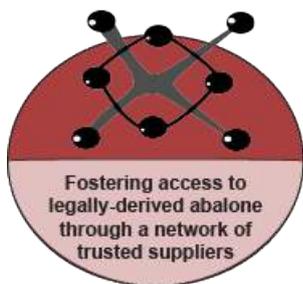
10.2. Financial investigations and joint operations

The dried abalone trade chain was earlier described as appearing like an hourglass, with fishers, processing companies and poachers on one side, and retailers, restaurants and consumers on the other. The centre of this trade chain narrows, and is made up of exporters in South Africa and importers in Hong Kong (and importers in other consumer countries) where fewer individuals and companies exist. Currently, knowledge of the individual players at this central bottleneck of the illegal dried abalone trade chain is poor. Further investigative effort is required to identify the key players in the illegal trade, the location and extent of their operations, and how syndicates involved in the illegal abalone trade on the South Africa side are linked to and interact with importers, distributors and transporters in Hong Kong.

Collaboration between the Hong Kong and South African law enforcement agencies will be critical, as would the use of specialised investigative approaches that follow illicit financial flows linked to suspected perpetrators. Hong Kong’s Joint Financial Intelligence Unit, which helps to enforce the city’s anti-money laundering and counter terrorism laws, is empowered with tools that could be very effective in crippling the illicit operations of criminal syndicates, such as asset forfeitures, and enforcement approaches such as “controlled deliveries,” to bring perpetrators to justice.

South African and Hong Kong law enforcement authorities have on a number of occasions collaborated in regard to abalone seizures. This included South African fisheries officials travelling to Hong Kong to give evidence in court concerning an unmanifested cargo of abalone—a co-operation that resulted in illegally-sourced abalone in shipping containers being sent back to South Africa and legal proceedings initiated against the perpetrators in the South African courts (SABC, 2012). Such positive collaboration provides a good basis for potential future joint operations.

Recommendation 2	Key Partners
Build on previous co-operation between Hong Kong and South African law enforcement authorities on seizing illegally-sourced abalone, through encouraging further collaborations that make use of specialised investigative approaches to track illicit financial flows arising from illegal abalone trade.	DAFF, SARS Customs division; C&ED, INTERPOL, UNODC



RECOMMENDATION 3

10.3. Fostering access to legally-derived abalone

Findings in the current report suggest that not all abalone traders were aware that some South African abalone is illegally-sourced. Even when they were aware, it was with exasperation that they felt that the import of abalone sourced from illegal fishing operations was an inevitable outcome in meeting local and re-export demand. However, it is important to recall that a sizeable portion of South Africa's abalone exports are from legal sources, with the majority coming from the farmed abalone sector. Wild abalone harvest is controlled with permits issued to individuals and companies that are required to harvest within an annual catch allocation.

There is an opportunity, therefore, to ensure that Hong Kong's abalone traders can access legally-derived South African abalone from a network of trusted suppliers that produce legally-sourced abalone. A stakeholder's forum should also be developed to engage the various actors along the trade chain and link up legal South African producers with Hong Kong's abalone traders. This would enhance verification and traceability of legally-sourced abalone, and help to strengthen legally-derived abalone supply chains.

Recommendation 3	Key Partners
Build up a network of trusted suppliers to enhance verification and traceability of legally-sourced abalone, and develop a stakeholder's forum with the aim of linking up producers and traders in source and consumer countries to strengthen legally-derived abalone supply chains.	DAFF, NGOs, Hong Kong dried abalone industry, business associations



RECOMMENDATION 4

10.4. Improve traceability of imported abalone

South Africa currently requires health certificates to be produced as a condition of export for selected food commodities, including the export of live, frozen and canned abalone. The requirement currently excludes dried abalone.

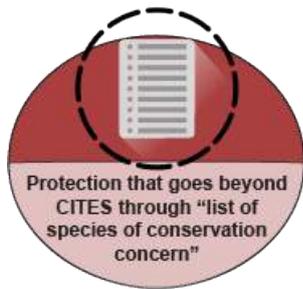
However, there are benefits to expanding the health certificate requirement to dried abalone, as it would ensure that only authorised abalone manufacturers in South Africa can apply for health certificates to export abalone as it has the potential to distinguish legal dried abalone from illegal dried abalone. This could make health certificates a potentially useful tool for Hong Kong's border security risk assessment, with shipments of dried abalone without health certificates a possible signal of illegal sources.

While Hong Kong does not currently require health certificates for the import of abalone (importers are merely "encouraged" to request for one), it could provide support to South African authorities if health certificates for dried abalone were mandated. At the very least, Hong Kong authorities could affirm that, from the outset, South African issued health certificate for dried abalone will be accepted if it were to come into force. Once the health certificates requirement for South Africa's export of dried abalone was in place, Hong Kong authorities could begin to track and tabulate abalone shipments with and without health certificates, producing data which could inform their risk assessment profiling for shipments of illegally-sourced abalone. Sharing these data with South African law enforcement agencies would be essential.

In the long-term, Hong Kong should consider broadening its mandatory health certification system to imported seafood, including imports of abalone, in all forms. A similar system could be implemented for seafood as is currently in place for the control of game, meat, poultry and egg imports, as a safeguard against health risks. The Food and Environmental Hygiene Department makes health certificates a compulsory condition of imports of these controlled food items (in accordance with Cap. 132AK), with certificates only recognised when it is issued by a recognised authority at the exporting country²⁷.

²⁷ See Centre for Food Safety (2016) for list of issuing entities in various countries/place.

Recommendation 4	Key Partners
<p>Hong Kong Customs and health authorities should provide support if efforts by South Africa to require health certificates for the export of dried abalone were implemented, and affirm that such certificates will be accepted in Hong Kong if it were to come into force. Hong Kong should also consider in the long-term a health certification requirement for all imported seafood as a compulsory condition of import.</p>	<p>NRCS, DAFF, C&ED, FEHD</p>



RECOMMENDATION 5

10.5. Species protection that goes beyond CITES

The Hong Kong SAR Government is urged to develop a universal “list of species of conservation concern” for Hong Kong. Such a list would draw from the IUCN Red List, China’s national Red List and locally threatened species assessments (Whitfort *et al.*, 2013), and include threatened and endangered species of relevance to the territory. Hong Kong’s Biodiversity Strategy and Action Plan, which begins its first year of implementation in 2017, specifically outlined the compilation of a list of threatened local species (Action 14a; Environment Bureau, 2016). It would be fitting to broaden the scope of this endeavour to include non-native species assessments, given the influence that Hong Kong has on numerous highly traded but threatened species.

Whitfort *et al.* (2013) has previously envisioned this list to be regularly updated as IUCN assessments at the international, national and local levels are revised, and to act as a basis for updating schedule lists of laws governing wildlife protection in Hong Kong,²⁸ which are exceedingly outdated. Threatened species, such as *H. midae*, could be protected under such a system, especially since it is under direct threat from consumption and trade in Hong Kong, and provide legal protection for wildlife beyond CITES²⁹. Trade related provisions could be included such that the import of species on this list are required to have export documents from the country of origin accompanying the shipment, as consistent with the trade in CITES listed species. Continuous revision of these schedule lists will help ensure Hong Kong’s wildlife protection would be brought up to date and responsive to changing threats over time.

²⁸ This could include the schedule lists of the Wild Animals Protection Ordinance (Cap. 170), which protects locally important fauna, the Forest and Countryside Ordinance (Cap. 96), protecting plants, as well as the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586), which gives effect locally to CITES.

²⁹ As CITES Member States are encouraged to do. See CITES Article XIV, Paragraph 1.

Recommendation 5	Key Partners
The Hong Kong SAR Government should develop a universal “list of species of conservation concern” for Hong Kong, which brings together threatened and endangered species of relevance to the city, and include non-native species threatened through trade and consumption in Hong Kong. This list could then be used as a basis for updating schedule lists of laws governing wildlife protection in Hong Kong.	AFCD, NGOs, academics



RECOMMENDATION 6

10.6. Monitoring and enforcement against abalone manipulation practices

There has been some, though limited, enforcement actions in the past by Hong Kong's Customs and Excise Department against unscrupulous trade behaviour by dried abalone traders. The most significant was the 2010 raid of 31 dried seafood outlets across Hong Kong for the sale of fake dried abalone. Only two other published cases involving seizures of dried abalone have occurred since 2010, although a string of cases for deceptive practices at dried seafood outlets in the past two years (2015–2016) have occurred involving other wildlife products, including red ginseng and Chinese medicinal herbs including *Herba Dendrobii* and *Herba Silybi* (Customs and Excise Department, 2015b; 2016a; 2016b; 2016c; 2016d; 2016e; 2016f).

Deliberate manipulations of abalone, including changes to its appearance to emulate another abalone species may be a violation of Cap. 362. Steps have already been made by scientists to sequence the DNA of commonly sold dried abalone in the Hong Kong market (Kwan, viewed on 6 January 2017; Willock *et al.*, 2004). This should facilitate future tests of suspected fraudulent abalone in the market. With the various types of deceptive practices that abalone traders have described during market surveys in this report (see section 6.5.2.), greater monitoring and enforcement of dried seafood outlets by the Customs and Excise Department is strongly encouraged.

Recommendation 6	Key Partners
Hong Kong's law enforcement authorities are encouraged to implement greater monitoring of dried seafood outlets, and to make use of forensics analysis to facilitate testing for possible fraudulent products, so that deceptive practices related to the sale of high value seafood products, including dried abalone, is stamped out amongst the city's dried seafood outlets.	C&ED, Hong Kong Government Laboratory, academics



RECOMMENDATION 7

10.7. Raising awareness about the issues in dried abalone trade

Surveys conducted for this report found that around half of the surveyed consumers were less inclined to consume abalone after learning about the endangered status of some wild abalone species, and that illegally sourced abalone are available in Hong Kong. Awareness campaigns that alert consumers about the issues in the abalone trade (threats to wild abalone species), and the benefits of abalone from farm hatcheries, may be an essential first step in allowing consumers to make more informed choices.

The inclination to reduce consumption was, however, less strong amongst those that do not consume abalone very frequently. This would suggest that more targeted messaging on illegal abalone catch and trade, designed to change the behaviour of those who frequently purchase abalone, will be required.

If the recommendation in section 10.4 is achieved and that health certificates can be developed for dried abalone in South Africa, it may be possible to use health certificates to influence consumer purchasing decisions. Raising consumer awareness about health certificates, which Hong Kong importers could obtain from their trading partners in the abalone source country, might enable such certificates to be used as an indicator of product quality. To make this happen, buy-in of traders along the trade chain (importers, wholesalers, retailers) to request health certificates as a condition of the trade is crucial. The Hong Kong Government is therefore encouraged to support efforts in South Africa to amend its policies on requiring health certificates for the trade in dried abalone, and in time, to engage abalone traders locally, through industry associations, to ask for health certificates from their suppliers, and support its use as a confirmation of health safety in consumer-directed advertising.

Recommendation 7	Key Partners
Alert consumers through targeted awareness campaigns about issues in the abalone trade (as a threat to wild abalone species) and benefits of abalone from farm hatcheries. Stakeholders in the abalone trade should also be engaged if health certificates could become a tool to affirm the health safety of abalone products in consumer-directed advertising.	C&ED, Hong Kong dried abalone industry, business associations, NGOs



RECOMMENDATION 8

10.8. Address trade data discrepancies

Trade data analysis for this research highlighted one major discrepancy between import and re-export data to mainland China, which suggests considerable under-reporting of imports from mainland China over the years. Re-exports to mainland China were also unexpectedly low, given the emphasis on the mainland Chinese consumer market for dried abalone from Hong Kong. Attention needs to be placed by Hong Kong's Customs and Excise Department on improving the reporting and accuracy of declarations by Hong Kong abalone importers, and to work with their counterparts in trading partner countries to encourage accurate reporting by importers and exporters.

Similarly, sizeable volumes of abalone have been imported to Hong Kong from other African countries (beyond South Africa), including a number of landlocked countries, and others that do not have commercial abalone fisheries or aquaculture operations. While abalone from these other African countries could well have been illegally transported out of South Africa for re-export to Hong Kong, it may also be possible that import declarations were falsified by the Hong Kong importer, to reduce suspicion that the shipment had left the ports in South Africa illegally. Inspections and seizures of dried abalone at Hong Kong's border checkpoints have been limited (section 10.6), but if a CITES listing is implemented (section 10.1), illegally-sourced dried abalone would more likely be on the radar of law enforcement agencies. Checks of import declarations with shipment manifests, or export declarations from the exporting countries could be done to uncover deceptive practices on import declarations.

Recommendation 8	Key Partners
Hong Kong needs to work with its trading partners to encourage accurate reporting by importers and exporters, and to ensure that improved mechanisms are in place to improve the ability of border authorities to uncover deceptive practices on consignment declarations.	C&SD, C&ED, SARS



RECOMMENDATION 9

10.9. Future Research on trade in mainland China and Viet Nam

Further research is necessary to understand better the trade links with mainland China and Viet Nam, both of whom are major abalone trading partners for countries for Hong Kong. Trade flows of abalone (especially in frozen form, but also dried abalone) from Hong Kong are mostly headed for, and driven by, a re-export trade with Viet Nam. Yet limited information exists on the scale of local demand and volume of abalone trade in mainland China. Trade data and market analyses are required to understand Viet Nam's role as a recent major force in the global abalone market, and the possible trade connections with mainland China.

Recommendation 9	Key Partners
<p>Future research should focus on mainland China and Viet Nam, as emerging drivers of the global abalone trade.</p>	<p>NGOs, Customs and statistics collection authorities in China and Viet Nam</p>

... (無花果)

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化痰止咳效果顯著

一家大細必備 ***



Dried abalone inside jar in Hong Kong market ©Wilson Lau/TRAFFIC

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APPENDIX I: CONSUMER SURVEY QUESTIONNAIRE

ABALONE CONSUMER SURVEY 鮑魚消費者問卷調查

Welcome to TRAFFIC's consumer survey on abalone consumption!

Thank you for agreeing to take part in this important survey measuring abalone use and consumption in Hong Kong. Today we will be gaining your thoughts and opinions about what drives your preferences and past experiences of consuming abalone. Your responses will be used to gain further insight into Hong Kong people's changing demand for abalone. This survey should only take 10 minutes to complete. Be assured that all answers you provide will be kept in the strictest confidentiality. Please click 'Next' to begin.

感謝你同意參與TRAFFIC這一項有關鮑魚使用和消費的問卷調查。透過是次調查，我們希望了解你食用鮑魚時的體驗和喜好。你的回答將有助我們進一步了解香港市民對鮑魚的需求和變化。本調查應該只需要10分鐘即可完成。你所提供的答案將會保密。

請向下按開始。

1. How often do you eat abalone? 你多久食一次鮑魚?
 - About once a year 一年一次
 - 2-3 times a year 一年兩至三次
 - 4-5 times a year 一年四至五次
 - More than 5 times a year 一年多於五次
 - Did not eat in last year (12 months) 一年沒吃
 - Never 從來不吃
 - Don't Know 沒有統計

2. Have you ever tried abalone from: 你吃過來自以下產地的鮑魚嗎？
 - Japan 日本
 - South Africa 南非
 - Africa (other than South Africa) 非洲（除南非外）

- Middle East 中東
- Mexico 墨西哥
- Australia 澳洲
- China 中國
- Indonesia 印尼
- Others (please provide details) _____ 其他 (請詳細填寫)

Recalling the last time you had abalone: 回顧你上次吃鮑魚的經驗:

3. Where did you consume it? 你在哪裡吃過鮑魚?

- Chinese restaurant 酒樓
- Club House 會所
- Hotel 酒店
- Home 在家
- Don't Recall/Don't know 忘記/不知道
- Others 其他 _____

4. What was the occasion for consuming abalone? 在哪個場合吃過鮑魚?

- Wedding banquet 婚宴
- Birthday banquet 壽宴
- Family unions (excluding festivals) 家庭聚餐 (不包括節日慶祝)
- Festival celebration: Lunar New Year 節日慶祝：農曆新年
- Festival celebration: other festivals 節日慶祝：其他節日
- Company/Corporate banquet 公司/商業宴會
- No special occasion 無特殊場合
- Don't Recall/Don't know 忘記/不知道
- Others 其他 _____

5. Who made the choice to consume abalone? 誰決定吃鮑魚？

- You 你自己
- A family member 家人/親戚
- A friend 朋友
- The host 主人家/主辦單位
- Don't Recall/Don't know 忘記/不知道

6. Would you have selected something other than abalone if you could pick? 你會選擇其他食品代替鮑魚嗎？

- Yes會
- Maybe或者
- No不會
- Don't Know不知道

7. If yes, what would you pick instead of abalone? (please fill in) 如會，你會選擇（請列明）？

8. Were you aware of the following when you last consumed abalone? 你品嚐鮑魚時，你會否留意：

- Country of origin 產地
- Abalone Type?, e.g. Yoshihama, Oma or Amidori abalone, Dalian abalone. 鮑魚類型 (例如網鮑, 禾麻鮑, 吉品鮑, 大連鮑)
- Wild-caught or farmed? 野生或是人工養殖

Please assign a score for abalone from the following countries based on your perception of their:

9. QUALITY 請依據品質為以下產地的鮑魚排列優劣

Excellent優質 Very good佳 Average中等 Poor劣 Very poor最劣 Don't know
不知道

Japan日本

South Africa南非

Africa (other than South Africa) 非洲 (除南非外)

Australia澳洲

Middle East中東

China中國

Indonesia印尼

Mexico墨西哥

10. VALUE FOR MONEY 以”抵食”為原則，請為以下產地的鮑魚排列優劣

Excellent優質 Very good佳 Average中等 Poor劣 Very poor最劣 Don't know
不知道

Japan日本

South Africa南非

Africa (other than South Africa) 非洲 (除南非外)

Australia澳洲

Middle East中東

China中國

Indonesia印尼

Mexico墨西哥

PERSONAL PERCEPTIONS AND PREFERENCES 個人觀點和喜好

11. In what form would you or your family usually buy unprepared abalone?
(check all boxes that apply) 你或你的家人會購買那一類未煮的鮑魚？

- Dried 乾鮑
- Canned 罐頭鮑
- Live 新鮮鮑
- Frozen 冰鮮鮑
- Never bought 從來沒買
- Don't recall/Don't know 忘記/不知道

12. Where do you or your family usually buy unprepared abalone from?
(check all boxes that apply) 你或你的家人會在那裡購買未煮的鮑魚？

- Dried seafood shops 海味店
- Online 網站
- Supermarket 超級市場
- Wet market 街市
- Never bought 從來沒買
- Don't recall/Don't know 忘記/不知道
- Others 其他

13. In your opinion, what are the most important characteristics of good quality abalone?

Most important 最重要	Very important 十分重要	Important 重要
Somewhat important 次重要	Least important 非重要	Don't know 不知道

Country of origin 出產國家

Abalone type (e.g. Amidori, Yoshihama, Oma, Dalian, Sulu, South African, etc.)
類型 (網鮑, 吉品鮑, 禾麻鮑, 大連鮑, 蘇洛鮑, 非洲鮑魚)

Size 大小

Colour 顏色

Smell 氣味

Weight 重量

Shape 形狀

14. What factors influence your decision when purchasing abalone? 甚麼是重要因素影響你選購鮑魚?

Most important 最重要
Somewhat important 次重要

Very important 十分重要
Least important 非重要

Important 重要
Don't know 不知道

Quality of Product (e.g. country of origin, abalone type, size, colour, smell, weight, shape) 品質 (出產國家, 類型, 大小, 顏色, 氣味, 重量, 形狀)

Reputation of Product's brand 牌子

Product Rarity 稀有

Price of Product 價錢

Opinion of Shopkeepers 店員提出的意見

Reputation of Retailer 零售店的商譽

WILD-CAUGHT VS FARMED 野生與人工養殖

15. Are you aware that some abalone are: 你有否注意到有些鮑魚是:

Yes有 No否

Wild caught野生

Raised in Farm人工養殖

16. Would you be willing to pay more or less money for a dish of wild-caught abalone compared to farmed abalone at a restaurant? 在食肆，與養殖鮑魚比較，你會願意付多少錢購買野生鮑魚？

- 50% more (e.g. \$200 → \$300) 多付百分之五十
- 25% more (e.g. \$200 → \$250) 多付百分之二十五
- 10% more (e.g. \$200 → \$220) 多付百分之十
- Pay the same price付相同價錢
- 10% less (e.g. \$200 → \$180) 少付百分之十
- 25% less (e.g. \$200 → \$150) 少付百分之二十五
- 50% less (e.g. \$200 → \$100) 少付百分之五十
- Don't Know 不知道

AWARENESS 認知

17. To what extent are you aware of:

Very aware 很清楚 Quite aware 清楚 May have heard of it before 有所聽聞
Not at all 完全不知道

Some species of abalone are becoming endangered?

你有留意到一些鮑魚正面臨瀕危的境況？

Illegal taking of abalone from the wild in South Africa?

你知道在南非有些野生鮑魚是非法採購嗎？

Illegally-sourced abalone available in Hong Kong?

你知道有非法鮑魚於香港售賣嗎？

18. Would you be more or less inclined to buy abalone in light of your awareness of:

Much more inclined 更傾向於 More inclined 傾向於 Neither more or less inclined 沒所謂 Somewhat inclined 不太願意 Much less inclined 不傾向 Don't know 不知道

Some abalone species becoming endangered? 若你知道有些鮑魚品種正面臨瀕危，你會不會購買鮑魚嗎？

Illegally-sourced abalone available in Hong Kong? 若你知道香港有售那些懷疑是非法來源的鮑魚，你會不會購買嗎？

CONCERN ABOUT THE ENVIRONMENT 關注環境

19. Choose the top 3 issues you are most concerned about. (check 3 boxes only) 請選擇三項你最關注的事項（只選三項）

- Health and family risks 健康和家庭的風險
- Environment/Pollution 環境/污染
- Social unrest 社會動盪
- Terrorism 恐怖主義
- Financial insecurity 金融波動

20. What does “Sustainable Consumption” mean to you? “可持續消費”對你意味著什麼？

Strongly agree 非常同意 Agree 同意 Neutral 中立 Disagree 反對
Strongly disagree 非常反對 Unsure/Don't know 不確定/不知道

Society needs to consume less 社會需要減少消費

Society needs to find more efficient ways to consume 社會需要找到更有效的方法來消費

I need to consume less 我需要減少消費

I need to find more efficient ways to consume 我需要找到更有效的方式來消費

Some people need to consume more 有些人需要更多消費

Looking after the environment 關心環境

Consideration for future generation 為下一代著想

The ocean has an unlimited supply of marine life 海洋裡的生物資源是無窮無盡的

DEMOGRAPHICS 個人資料

21. What is your age range? 您屬於哪個年齡組別？

- Under 21 / 21歲之下
- 21-30 / 21-30歲
- 31-40 / 31-40歲
- 41-50 / 41-50歲
- 51-60 / 51-60歲
- Over 60 / 60歲之上

22. Gender 性別

- Male 男
- Female 女

23. What is the main language that you speak in at home? 你主要說哪種語言？

- Cantonese 廣東話
- Mandarin 普通話
- English 英文
- Don't know/Refuse to answer 不知道/拒答
- Others 其他 _____

24. Do you or family members that you live with own a car? 你或你的家人是否擁有一部私家車?

- Yes是
- No否
- Don' t know/Refuse to answer 不知道/拒答

25. Do you or your household members live in a home that you own, rent or live rent-free? 你或你的家人目前的居所是自置、租住、或以免租方式?

- Own自置
- Rent租住
- Rent-free免租
- Don' t know/Refuse to answer 不知道/拒答

Thank you for your participation! 謝謝你的參與!

APPENDIX II: DETERMINANTS OF GOOD QUALITY IN ABALONE

Understanding what constitutes good quality abalone, and being able to tell the difference, is important for this research as poached abalone from South Africa is often perceived to be of lower quality than abalone that were legally harvested and processed. Poached abalone in South Africa is apparently processed in covert treatment facilities and treated with chemical preservatives (sulphur dioxide; Food and Environmental Hygiene Department, 2011), as oppose to traditional sun-dried methods (De Greef and Raemaekers, 2014). Hence features of good quality abalone could be one way of distinguishing between legally sourced and poached abalone.

The clearest differentiator of quality is an abalone's country of origin. Moreover, abalone can be further graded according to the region where a specific abalone is sourced, referred in this report as the abalone type. The provenance of the three types of Japanese abalone—Amidori, Oma and Yoshihama abalone—suggests not only difference in species and region of origin, but also drying and processing methods used. The resulting consistency in abalone from Japan are valued highly in Hong Kong, as reflected in the premium prices charged.

Abalone from all other countries are not often differentiated according to types/brands by Hong Kong traders, although exceptions include the development of kippin abalone from South Africa, which are cultured abalone stock that has been dried according to the method from the Yoshihama abalone in Japan. As a result, kippin abalone is perceived by traders to be of higher quality and of a higher price range than other comparably sized abalone from South Africa.

Beyond associations of quality through country of origin and branding, Hong Kong traders have alluded to the importance of a sweet centre when appraising the quality of abalone. This sweetness is in turn determined by the relative dryness and length of time the abalone has been dried. When an abalone is considered to have been properly dried for a period of time, a layer of salt, which appears as a layer of white powder, forms on the surface of an abalone. This entrenched salinity is reduced through the drying process, and can continue to leach out if kept over time in a dry environment, i.e. dried seafood retailers typically keep abalone in sealed glass jars for this reason. A sweetness is said to remain once the salty leachate is washed and removed from the surface. Hence, traders often look to the dryness of an abalone as an indicator of quality. The researcher have also seen a number of outlets labelling abalone batches as “sweet centred abalone”. Another reason for dryness is that it serves as a preservative; some traders have suggested that an incompletely dried abalone can foster bacterial growth and can more easily spoil.

Related to this is the age of an abalone, as time facilitates the leaching process. Matured abalone that has been kept in a dry environment for a number of years can also fetch higher prices. The reduced water and salt content can make older abalone lighter in weight, with traders associating this with better value, as abalone is priced according to its weight. The slight difference in touch, by considering the weight of its centre, could be one way to judge the quality of individual dried abalone pieces.

Other considerations are its colour, smell and shape. Some traders have associated older abalone with a darker colour, which is considered a sign of its inner sweetness. Traders have also noted that the difference in the smell of abalone in which the sweet-centredness is more apparent, and thus on smell alone, could identify pieces of good quality. Another trader suggested that the shell that housed the abalone meat is indicative of good quality, emphasising that their stock was

sourced from dealers who guaranteed that there were nine-holes in the shell of the abalone. The appearance and shape of dried abalone also provides signs of good, and poor, quality abalone. Generally, the thicker an individual piece, including a protruding central mound, the meatier an abalone is perceived to be. The physical appearance of abalone may have an effect on household consumers that purchase abalone irregularly, and who may be purchasing abalone for gift-giving, in which case there is greater emphasis on having consistent looking abalone pieces. Traders mentioned that they often sift through dried abalone shipments, displaying the best looking ones in store. The ones considered as having the worst appearance are reserved for restaurants, which would typically favour these for their lower prices and thus the possibility of higher margins when sold.

Another point of differentiation was whether abalone was wild-caught or farmed. Many traders had understood that wild and cultured abalone can differ according to its country of origin, abalone type, and manufacturer, and had communicated this distinction to the researcher. For example, Japanese and Dalian (China) abalone were thought to be predominantly cultured in farms, while South African abalone had more varied responses. Other traders had emphasised that abalone was either entirely caught from the wild or farmed. One trader insisted that all abalone should be classified as wild-caught, even when cultured in farms, as the latter tends to be situated along the coast and use nearby seawater in its operations. Whether abalone was wild-caught or farmed did not appear to have an effect on the price offered, despite claims by some traders that either wild-caught abalone was better given that it was sourced from its natural habitat, or farmed abalone was superior given the meticulous care applied in farms throughout the life of an abalone.

TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

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