FIELDWORK REPORT FROM HONG KONG SAR AND MAINLAND CHINA,

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Dr. Michael Fabinyi
Australian Research Council Centre of Excellence for Coral Reef Studies
James Cook University
Townsville, QLD 4811
Australia

and

WorldFish
11960 Bayan Lepas
Penang
Malaysia

michael.fabinyi@jcu.edu.au
1. Introduction and Outline of Activities

This field study aimed to understand the components of the Papua New Guinean (PNG) bêche-de-mer (BDM) ‘fish chain’ that extend into Hong Kong SAR and mainland China, and the governance context of this fish chain. Fieldwork was conducted in Hong Kong, Guangzhou, Beijing and Shanghai. These particular sites were chosen for two reasons: 1) to obtain broad coverage of different types of end markets and trading hubs in China; 2) given the sensitivities associated with much of this trade and the difficulty of generating data, to build on existing research networks. For example, even though Beijing is not the largest hub for tropical sea cucumber trading in China, the interviews there were able to build on earlier research in Beijing from 2012-2014. Interviews were conducted at the major wholesale markets for dried seafood in each city: Sheung Wan in Hong Kong, Yidelu in Guangzhou, Jingshen and Lian Hong in Beijing, and Tongchuan in Shanghai.
Interviews were conducted together with a research assistant in all four locations in order to interpret from Cantonese when the interviewee did not speak in Mandarin, or to assist in the translation of some Mandarin when necessary. Interviews in Hong Kong and Guangzhou were conducted in a mixture of Cantonese and Mandarin, while interviews in Beijing and Shanghai were conducted in Mandarin. Some interviews extended up to an hour, while most lasted for approximately thirty minutes. In all, 30 traders or representatives of trade organisations were interviewed in detail (see Table 1). Observations were also conducted, as well as many brief informal conversations with traders and price checks at retail outlets. Interviews were also carried out with three key informants with detailed knowledge of the BDM trade in Hong Kong and China.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>NUMBER OF INTERVIEWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>12</td>
</tr>
<tr>
<td>Guangzhou</td>
<td>9</td>
</tr>
<tr>
<td>Beijing</td>
<td>4</td>
</tr>
<tr>
<td>Shanghai</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 1: Interviews in Hong Kong and mainland China.

Interviews focused on a range of topics related to the trade, which have been consolidated and structured below in the following sections as: 2.) trade structure, 3.) buyer preferences, 4.) pricing and market trends, and 5.) environmental regulation. The final section discusses policy implications of this study, limitations of this study and areas for further research.

2. Trade structure
The structure of the BDM trade in Hong Kong SAR and mainland China is complex, subject to change over time, and enmeshed in a broad range of other economic and social institutions. Most traders of BDM will sell BDM as part of a broader portfolio of dried seafood products that will include abalone,
fish maw, scallops, and shark fin. Traders will specialise in one or more of these products to differing degrees, and there are some traders who exclusively focus on BDM. Although the majority of the trade is in dried form – BDM – there are also frozen sea cucumbers that are sold, more often in retail outlets such as supermarkets (see Purcell et al. 2014). These can be imported frozen, or as BDM, and then processed by retailers. While there is a diversity of trade routes, one key route is from source countries into Hong Kong, re-export to Guangzhou, and then throughout mainland China.

2.1 Hong Kong
Hong Kong has long operated as a major importing location and entrépot for the BDM trade (Clarke 2004; To and Shea 2012; Conand et al. 2014). Hong Kong traders tend to operate in a variety of roles, and there is not necessarily a strict division between importers, wholesalers and retailers. These blurred roles may be attributed in part to the ease of importing BDM and other products into Hong Kong, with its status as a freeport. Traders may therefore import directly from some countries or for some particular types of BDM products, buy wholesale from other importers for other products, and also operate retail outlets. For example, one trader imported BDM directly from Malaysia, but bought other types of BDM from other traders located nearby. Another trader imported temperate BDM directly from Japan, but bought other tropical sea cucumbers from other traders. One interviewed trader advised that they bought from Singapore – another regional entrépot – but that the role of Singapore had declined significantly in recent years. Overall, there is a high level of diversity in the source origins of BDM traded in Hong Kong, and BDM from around the globe are found there (see Conand et al. 2014). There are traders located throughout Hong Kong, but the largest concentration are in the Sheung Wan area.

Hong Kong-based traders will sell both within Hong Kong, and to overseas buyers. Within Hong Kong, customers include restaurants, retail stores, other wholesalers and individuals. For example, one trader interviewed focused on high-end sea cucumbers for the Hong Kong restaurant market. They imported most of their sea cucumbers and other seafood such as abalone from Australia, and emphasised the importance of quality in their products. They required health and quarantine
certificates from the Department of Australian Fisheries and Forestry, and advised that they did not
normally buy from countries such as Indonesia and PNG because of the reputation for poor quality.
They did not attempt to sell into mainland China, ‘because of the 30% tax. The risk is too great for us
to try and sell to mainland China, but most traders here do that. So we cannot compete with them,
and we focus instead on 5-star hotels in Hong Kong’. This reference to the practices of other traders
is what is commonly referred to as the ‘grey trade’. This involves product imported into Hong Kong
to avoid taxes, and then transported over the border to mainland China.

The majority of traders reported selling most of their product to mainland China. When selling to
mainland Chinese buyers, Hong Kong-based traders advised that these buyers from the mainland
would come from their store and buy the product, and then transportation to mainland China was
their responsibility. As one trader described: ‘once we have sold the product to them, everything,
including both the physical logistics of getting the product back to China, and the legal implications,
is completely their responsibility. We don’t ask too many questions. Every country has its own way
of doing business, and that is how they request for us to do business.’ These responses are very
similar to those of other traders of seafood products to China when doing business via Hong Kong
(Fabinyi 2015). Some also reported selling small quantities to overseas destinations such as Canada
and the US, likely to ethnic Chinese communities living there. Others reported selling some product
to Vietnam (see 2.2).

2.2 Guangzhou
Guangzhou is the major entrépot for sea cucumbers imported into mainland China, although
Shenzhen also handles some trade. There are approximately 1000 members of the Guangzhou Dried
Seafood and Nut Industry Association (GDSNIA), the primary trade association in the Yideli market
area. All of the traders interviewed described how they usually bought their BDM from Hong Kong in
order to avoid import taxes. When asked, for example, about potential opportunities for PNG
exporters to export directly to Guangzhou, traders simply stated that this would be a more
expensive way to do things, and that it was much cheaper simply to sell in Hong Kong in order to
avoid the taxes. The GDSNIA explained that it advised all of its members to do business completely legally, but acknowledged that it did not control the way its members did their business. How the BDM is imported into Guangzhou, and the regulations that are supposed to govern the cross-border trade is not something traders wanted to talk about in detail. This is understandable, given recent high-profile cases of prosecution against seafood traders in Guangdong province, and even more recent crackdowns by the central Chinese government against smuggling (Godfrey 2014, 2015a). Some traders advised that BDM was hidden within other cheaper types of seafood that would be subject to lower taxes. Others noted that vehicle transports into mainland China are only rarely inspected in any detail. There is also the possibility of ‘parallel goods trading’, which involves the practice of transporting small quantities of goods across the border in very high frequencies (Chan 2015). Some Guangzhou-based traders simply advised that these matters were all the responsibility of a ‘logistics company’, and that they did not know about any of the customs regulations.

In addition to the lower taxes, there are other reasons why Hong Kong remains a hub for imported seafood. Even when import taxes into mainland China may not be levied because of free trade agreements, for example, much of the seafood still is sourced through Hong Kong for practical purposes and lower overall transaction costs. Many of the large seafood traders with historical business connections in many source countries throughout the world are based in Hong Kong, meaning that much business between the mainland and source countries is still mediated through these companies. The customs and quarantine procedures are also far more efficient than in the mainland, meaning that many Chinese-based traders choose to continue to import their product via Hong Kong even when there are no taxation imperatives to mainland trade (Fabinyi 2015).

Vietnam is another grey trade route by which BDM and other agricultural products are imported into mainland China (Eyler 2014; see also To and Shea 2012). Some of the imported seafood in Beijing, for example, comes via Vietnam, and then through Nanning in Guangxi province (Fabinyi and Liu under review a). There may be some BDM also passing through Guangxi, but traders suggested that
this was not the case, advising that the small amount of BDM that did come from Vietnam was
distributed via Guangzhou, not Guangxi. However, traders suggested that only a small amount of
BDM passed through Vietnam, and that Hong Kong remained the primary source for most of the sea
cucumbers in Guangzhou. This suggests that Hong Kong re-export statistics to mainland China, which
in recent years have shown significant declines (To and Shea 2012; Conand et al. 2014), may be
missing a considerable portion of the trade. From Guangzhou, the sea cucumbers are transported
throughout mainland China.

2.3 Beijing and Shanghai
The Beijing market has traditionally preferred the temperate, Japanese spiky sea cucumber, *A.
*japonicus, but there is also a smaller market for BDM from tropical sea cucumbers (see also section
4.2). All of the Beijing-based traders interviewed bought their sea cucumbers from the Yidelu
markets in Guangzhou. There are two relatively larger wholesalers in the Jingshen market who
specialised in tropical sea cucumbers, and many other traders who dealt in smaller quantities of
BDM from tropical sea cucumbers. Most of the dried seafood traders in Beijing focus on selling *A.
*japonicus, and/or other dried seafood such as fish maw and abalone. The market for BDM from
tropical sea cucumbers among the Beijing wholesalers is mostly in and around Beijing itself.
Restaurants in Beijing are the primary clientele, but they also serve the market for nearby cities and
provinces such as Tianjin, Hebei, Henan and Shanxi.

Shanghai consumes more seafood per capita than Beijing (Fabinyi and Liu under review b), and there
is slightly greater diversity in BDM trade routes and products in Shanghai. Similar to Beijing, most
traders bought their sea cucumbers from Guangzhou, highlighting the fact in their interviews that it
was cheaper to buy from there than directly from overseas. These traders will regularly visit the
Yidelu markets in Guangzhou, inspecting for quality before buying. Most traders in Shanghai sell to
restaurants and other retailers in and around Shanghai, or to what is colloquially referred to as
‘JiangZheHu’: Jiangsu province, Zhejiang province and Shanghai.
Most of the traders in both Beijing and Shanghai are of either Guangdong or Fujianese origin, and many have family or long-term links with traders in Guangzhou. The seafood trade as a whole in China is marked by the dominance of informal social norms related to trust and long-term social relationships (Cheung and Chang 2011; Fabinyi and Liu under review a).

2.4 Direct trade to the mainland
While according to interviewees the grey trade via Hong Kong remained the dominant mode of BDM import into mainland China, the importance of direct trading to the mainland may be growing. Intermittent crackdowns on the grey trade mean that the risk of detection and prosecution is becoming higher (Godfrey 2014, 2015a). For example, in 2014 eight offenders in Guangdong province were sentenced to between three and twelve years in prison for smuggling shark fin and BDM (Godfrey 2014). There were a minority of interviewed traders in mainland China who reported importing directly from overseas. How these traders are able to overcome the competitive disadvantage of paying import tariffs is unclear, but likely relates to the rapid growth of Chinese free trade agreements, including with the Association of Southeast Asian Nations (ASEAN) (see Godfrey 2015c). Dried seafood such as BDM is far less perishable than live or frozen seafood, meaning that delays in customs and quarantine procedures on the mainland are of less significance.

Two Hong Kong traders described the rise of Guangzhou-based traders who had traded with PNG directly. These Guangzhou-based traders were described in negative terms as having taken away a share of the Hong Kong BDM market. For example, one suggested that in PNG several Guangzhou-based traders had set up illegitimate operations and offered far higher ‘artificial’ prices to PNG traders in order to capture the market share. These Hong Kong based traders were disappointed that although they worked for a long time in PNG, and had relationships with PNG partners who also tried to work with the government, these Guangzhou-based traders had no such relationships but simply ‘bought’ their way into the PNG market. Another Hong Kong based trader noted that while he used to import BDM from Fiji, he could not do so anymore as mainland Chinese traders now dominated the supply routes there.
3. Buyer preferences

3.1 Financing

Financing, or the practice of extending credit to exporters in source countries, was not a commonly cited practice among traders. For most, this practice was seen as highly risky. As one trader described: ‘We really prefer to just pay on receiving the goods, and keep the supply chain separate. If you pay first, you face a lot of risks and it is a lot more work. You have to go over there and make sure that they are processing the product properly, that they are not wasting your money. Many other traders have lost money this way.’ This was a view commonly expressed among many traders. For Guangzhou-based traders, they pointed out that they did not need to invest overseas because it was far easier for them to just go to Hong Kong and inspect the goods there. ‘Why should we go overseas, with all of the risks, when we can just go to Hong Kong and check the product quality?’ Almost all traders highlighted the importance of trust – without a trusted local partner, such an undertaking was almost unanimously viewed by traders as too risky and dangerous. This was a point that was emphasised by almost every trader who was interviewed. As one trader described: ‘We have a trusted partner [in South Asia] who we buy from, and we finance him. He has a good relationship with the people on the ground, he knows the government, he knows the local people and the local traders. He is much better suited to working with these matters. But we have been working with him for years. If you were to come into my office and propose this sort of thing straightaway, that wouldn’t be possible after just five minutes.’

Two traders were interviewed who had financed exporters based in PNG, with contrasting experiences. One Hong Kong-based trading company had a trusted partner as their PNG exporter, and used to regularly fund their fishing activities. They would invest USD10-50,000 at a time, and then receive the product 3-5 months later. The long delay between investing the money and receiving the product was not a problem for him, he explained, because it was a relationship based on trust. He claimed that trust was everything in the business, and that he could not have multiple suppliers in the one country: ‘it is like a husband and wife. If one goes off with somebody else behind
the other’s back, then the other one will do so as well and the relationship will fall apart’. He noted that as the PNG moratorium came into effect while there was still a balance owing, his company was still in fact owed money, but that this was not a problem because there was an open line of communication and trust. The second trader who had financed PNG exporters, based in Guangzhou, had a very negative experience. She invested CNY1,000,000 (approximately USD160,000) with a middleman, who disappeared with the money and was never seen again. Other traders spoke specifically of the difficulties of working in PNG – one advised that the security situation was very poor and so he was not keen to invest there, while several more simply stated that they had heard stories of traders being cheated there and that they did not trust the local people.

Another Hong Kong based trading company had had a long-term relationship with an exporting company in PNG over many years. This was also a good relationship of trust, and the Hong Kong trader spoke very highly of their PNG partners. This Hong Kong company did not finance their activities; instead, the PNG exporters funded their own activities. These Hong Kong-based traders enjoyed working with their PNG partners because of the need for what they cited as relationships with the fishers. According to them, the fishers needed discipline and a strict manager in order to produce quality product, and their PNG partners were able to provide this. They themselves did not trust the local PNG collectors, but trusted their partners to work with them instead.

Financing therefore does not appear to be a model favoured by a majority of traders. While many traders recognise that many PNG exporters may require extra capital to fund their activities, all traders highlighted the importance of only financing long-term, trusted business partners.

3.2 Value, volume and quality

Hong Kong traders who bought from PNG did not have a strong preference about buying low or high value sea cucumbers. As one trader noted, ‘this is something we can’t control. Collectors aren’t going to throw out their bycatch. Of course, we would like to have high value most of the time, but we accept that this isn’t something that is practical’. Other traders we spoke to advised that they
preferred to buy higher value species, but that they usually sold a mixture of higher and lower valued types. When discussing the volume of BDM they prefer to buy, traders highlighted the importance of the context of the business relationship: if they are just starting to work with a new supplier, then they would only prefer to buy a small amount. If, however, they have worked with the supplier for a long time, they generally prefer larger, more consistent volumes.

However, more important than the type and volume of BDM per se was the quality of the processing. Many traders simply stated that they would only try and buy good-quality sea cucumbers, and avoid those that were poorly processed. Most traders stressed the importance of good processing. PNG products had a poor reputation for processing, especially in contrast to those from Australia. One trader noted how because of the poor quality of PNG products they had stopped buying from there.

Dryness was the most important factor mentioned by many traders; related to this was the expansion rate (i.e. how much they convert to wet weight). Other characteristics looked for by traders included the way the sea cucumber was cut; the saltiness (the less salty the better); the size; the shape (straight and symmetrical, not curly); and the extent of damage. There are no formal grades in the wholesale markets, and different traders will grade their product according to their own preferences, usually according to the type of BDM, the size, and the quality. PNG’s ‘A-B-C-D’ grades are not used.

Traders in Hong Kong who buy from PNG stated that they required the information that they do on the bags for export simply for identification purposes and convenience: it is not a government requirement, but assists the importer in understanding what is inside the bags.

4. Prices and consumer market trends
4.1 Place of origin branding
Place of origin branding is used, but only for certain countries – Australia and Japan in particular.

Almost all of the sandfish sold in Hong Kong, for example, is simply marketed as ‘Australian bald sea
cucumber’ (see Figure 2). These include extremely small sea cucumbers that are unlikely to actually be from there.

Figure 2: ‘Australian bald’ BDM in a Hong Kong retail store.

By contrast, despite the high numbers of these types of BDM exported to Hong Kong from countries such as Philippines and Indonesia (Conand et al. 2014), no branding from these countries was observed. This is a similar pattern to what was observed in the live reef food fishery in Beijing, where almost of the leopard coral grouper (*Plectropomus leopardus*) are marketed as from Australia, despite the fact that other major exporters include the Philippines and Indonesia. Australia enjoys a high reputation for its agricultural products, which is exploited by traders.

Among traders, PNG products did not have a good reputation for quality. Most traders suggested that the quality was in fact very low, due to poor processing (e.g. poor drying, poor cutting, bad shape, high salt content). Only one trader suggested that the quality of PNG products was high, citing the high quality of the ‘seawater’ in PNG. In Beijing and Shanghai, most traders had not heard even heard of the country or knew where it was geographically located. Traders suggested that the place of origin was generally far less important than simply the type and quality of the BDM. One trader gave the example of importing a new type of BDM from Turkey that was not previously commonly sold in Hong Kong, and taking more than two years to begin selling them well.
4.2 Geographical variation in consumer preferences

In all of Hong Kong, Guangzhou, Beijing and Shanghai, the Japanese spiky sea cucumbers *A. japonicus* are the most highly-priced and regarded as the best quality. This is for several reasons:

- Their spiky appearance is more appealing than the tropical sea cucumbers (the longer the spikes, the better);
- They are a suitable size to be served on a plate or in a bowl individually, rather than needing to be sliced up as with most of the tropical sea cucumbers;
- And they are regarded as having better nutrition and health benefits than the tropical sea cucumbers. Some traders claimed that consumer preferences in Guangdong and Hong Kong were similar, but others advised that the Hong Kong market tended to prefer better quality and higher value BDM than the mainland (see also Purcell 2014). Reported prices in Hong Kong were significantly higher than in Guangzhou and other mainland Chinese locations, which supports this view (see Table 2 in section 4.3). In both Hong Kong and Guangzhou, BDM of many varieties, qualities and sizes were observed.

In Beijing, by contrast, there is a distinct, stronger preference for *A. japonicus*. Wholesale traders will often still sell some types of BDM from tropical sea cucumbers, but the ratio of BDM from tropical sea cucumbers to *A. japonicus* was noticeably different to that of Guangzhou and even Shanghai. Almost missing entirely from the markets in Beijing was *H. lessoni* (golden sandfish) and *H. scabra* (sandfish) (‘bald sea cucumber’); traders there noted that these types are quite unpopular in Beijing, and viewed as low quality. Shanghai traders also had a preference for *A. japonicus*, but it was estimated that there was a slightly larger proportion of BDM from tropical sea cucumbers being sold there than in Beijing. One type of sea cucumber that was particularly popular in Shanghai was *dawushen* (likely *Actinopyga palauensis*).

4.3 Recent trends in prices

Traders widely reported a decrease in prices for most types of BDM in recent years. The factors behind these trends relate both to demand and supply. In mainland China, two issues relating to weaker demand were cited prominently by many traders. First, the government’s anti-corruption campaign is viewed to have had a significant effect on the sales of dried seafood generally. This
campaign began shortly after Xi Jinping’s ascent to the leadership in late 2012, and has continued and even intensified since then. One of the specific targets of this campaign was government officials using public funds at banquets. While BDM is not exclusively eaten at such banquets, a considerable proportion of it is. More broadly, the luxury banquet scene has seen a strong downturn: even if government officials aren’t directly involved in such banquets, the anti-corruption crackdown has been so intense that it has meant that all consumers of such products, not just government officials have been affected. Some products, such as shark fin and higher-priced live reef fish such as Napoleon wrasse (Cheilinus undulatus) appear to have been affected more intensely, as they sit at the very top of the price list in seafood banquets (Fabinyi and Liu under review a). BDM, however, has still clearly been affected. Another factor relating to demand has been the Chinese economy. Aiming to transition to a slower but more sustainable economic growth pattern, in the past several years the Chinese economy has been slowing (Inman 2015). Demand for BDM has likely dropped as a part of this broader slowdown.

A third reason behind the drop in price may also be a crackdown on some elements of the grey trade between Hong Kong, Vietnam and China. One recent report suggested that because Chinese buyers are now forced to pay taxes on their imports due to the grey trade crackdown, they are requesting lower prices (Godfrey 2015a). However, this was not corroborated in interviews with traders in China, who all suggested that the grey trade for BDM between Hong Kong and China was still thriving (see section 2).

Most traders suggested that it was demand from their buyers that ‘controlled’ the price, which ultimately originates from demand from mainland Chinese consumers. The Hong Kong market was viewed as too small to influence the overall market. Each trader implied that they simply passed on the price to the next link in the chain, and that they did not make a major profit. Some traders discussed how they simply added 10% of the value in order to make their profit, but most traders were unwilling to discuss prices and profit margins in such detail.
Supply issues were acknowledged to influence the price as well. Several traders spoke of cultured *A. japonicus* sea cucumbers suffering significant price drops because of a glut of supply, which has also been reported (Godfrey 2015b). Producers of wild-caught, tropical sea cucumbers, however, are unable to rapidly increase production rates to the same extent, and so their price is supposedly more stable, according to traders. Yet, other traders also spoke of recent difficulties in sourcing supply from tropical BDM – such as from PNG due to the moratorium – which puts upward pressure on prices.

Hong Kong traders of dried seafood widely reported struggling with business over the past two to three years. A high proportion of addresses of traders supplied by the PNG National Fisheries Authority had closed down, and been replaced by other businesses such as banks and cafés. The Sheung Wan area in Hong Kong has in recent years also witnessed rising rental prices due to the expansion of the subway line in the area, which may have also contributed to financial stress for traders. One Hong Kong trader advised that the price of most kinds of BDM had dropped by 30-50% in the past year or so; others did not give specific figures or estimates but noted that demand had dropped, especially from mainland China. Guangzhou based traders similarly noted how *T. ananas* had dropped in price from USD159/kg to USD96/kg, while Japanese spiky sea cucumber had dropped from USD1892 to USD1260/kg over the past year. One exception across several sites was *nanmeishen* (South American sea cucumbers; *I. badionatus, I. fuscus*), which had instead witnessed a rapid increase in prices over the last year. In Hong Kong retail stores, for example, this type of BDM had risen from USD22/kg to 294/kg in the past year, and in Shanghai wholesale markets they had risen from USD128/kg to USD188/kg in the past year. When PNG was last exporting BDM, one Hong Kong trader who bought directly from PNG advised that they paid PNG exporters USD100/kg for good-sized, good quality teatfish and USD110-120/kg for good-sized, good quality sandfish during the period of 2004-2009.
Beijing traders reported significant declines in sales over the past several years (see Fabinyi and Liu under review a). One Beijing trader spoke of an 80% drop in sales; another described a 70-80% drop in sales. Several dried seafood traders had closed since 2013 (see Figure 3).

**Figure 3:** Closed stores at Jingshen dried seafood market, Beijing.

The Lian Hong seafood market – a market devoted exclusively to dried seafood, located near the Jingshen seafood market – has seen two floors taken over by a banking and insurance company, and far fewer traders on the one remaining floor. Beijing may have been particularly hard hit by the anti-corruption campaign because of the prevalence of government-related banquet activities in Beijing. Traders aim to respond to these market dynamics by shifting to medium and lower-priced varieties of BDM and dried seafood. For example, in Beijing, shark fin in particular is now traded less.

Market prices were highly variable, depending on the quality and size of the BDM. ‘Australian bald’ BDM in Hong Kong (H. lessoni and H. scabra), for example, ranges from very small and curly BDM at less than USD85/kg to more than USD350/kg for larger and better quality specimens. Detailed work on pricing was not conducted, as this is the focus of a PhD study currently being finalised at Hong Kong University, and therefore it was deemed more worthwhile to concentrate on other topics. The prices below are only indicative, collected opportunistically and care should be taken in their interpretation. It is noteworthy, however, that prices in Hong Kong tend to be significantly higher than in mainland China. This supports the view that the highest grade of BDM is sold in Hong Kong.
<table>
<thead>
<tr>
<th>COMMON CHINESE NAME</th>
<th>COMMON ENGLISH NAME</th>
<th>SCIENTIFIC NAME</th>
<th>Hong Kong wholesale price</th>
<th>Hong Kong retail price</th>
<th>Guangzhou wholesale price</th>
<th>Beijing wholesale price</th>
<th>Shanghai wholesale price</th>
</tr>
</thead>
<tbody>
<tr>
<td>穹参/tushen/bald sea cucumber.</td>
<td>Sandfish, Golden sandfish</td>
<td>Holothuria scabra, Holothuria lessonii.</td>
<td>USD196-338/kg</td>
<td>USD84-359/kg</td>
<td>USD64-156/kg</td>
<td>USD128-220/kg</td>
<td>USD96-252/kg</td>
</tr>
<tr>
<td>猪婆/zhupo/Grandma pig</td>
<td>White teatfish, Black teatfish</td>
<td>Holothuria fuscogilva, Holothuria nobilis, Holothuria whitmaei</td>
<td>USD191-319/kg</td>
<td>USD166-294/kg</td>
<td>USD96-156/kg</td>
<td>USD128-156/kg</td>
<td>USD96-152/kg</td>
</tr>
<tr>
<td>梅花参/meihuashen/peach blossom sea cucumber</td>
<td>Prickly redfish</td>
<td>Thelenota ananas</td>
<td>USD63/kg</td>
<td>USD96-128</td>
<td>USD96/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>螺丝参/luosishen/screw sea cucumber</td>
<td></td>
<td></td>
<td>USD68/kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>乌云球参/wuyunqiu/shen/Black ball sea cucumber</td>
<td></td>
<td></td>
<td></td>
<td>USD40-60/kg</td>
<td>USD36/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>南美参/nanmeishen/South American sea cucumber</td>
<td>Brown sea cucumber, four-sided sea cucumbers</td>
<td>Isostichopus fuscus, Isostichopus badionotus</td>
<td>USD250/kg</td>
<td>USD231-294/kg</td>
<td>USD188-220/kg</td>
<td>USD156-188/kg</td>
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</tr>
<tr>
<td>黄玉参/Huangyusheen/topaz</td>
<td>Probably curryfish</td>
<td>Probably Stichopus herrmanni</td>
<td>USD96-128/kg</td>
<td>USD96/kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>方刺参/fangcishen/square spiny sea cucumber</td>
<td>Probably Actinopyga spp.</td>
<td></td>
<td>USD128/kg</td>
<td>USD128/kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>大雾参/dawusheen/black cloud sea cucumber</td>
<td>Probably deepwater</td>
<td>Probably Actinopyga</td>
<td>USD128/kg (USD24/kg)</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Table 2: Common types and prices of BDM sold in Hong Kong SAR, Guangzhou, Beijing and Shanghai.
reporting requirements, claimed that these were the responsibility of external ‘logistics companies’, simply refused to respond, or changed the subject: this is likely due to the fact that most of the BDM is imported into Guangzhou via the grey trade. Traders who imported directly into Shanghai advised that they also were not familiar with the customs codes or that this was the responsibility of an external ‘logistics company.’

In Beijing and Shanghai, wholesale traders are required to keep records of how much of what products they sell, and to who – these are primarily for tax purposes. Local names, not commodity codes, are used in these account books. Certificates of origin are good to have if possible, so that it is possible for the traders to assign ultimate responsibility if a food safety issue arises, but these are not government requirements. Several traders noted that food safety issues are less common with dried seafood products such as BDM compared to highly perishable live or frozen seafood. It was reportedly a common practice for traders in Guangzhou to simply group large quantities of different seafood products together and use a single certificate of origin. Because of this practice, the prevalence of grey trading, and the fact that BDM comes from many different countries, traceability is therefore extremely low. By the time most BDM from tropical sea cucumbers arrives in Beijing or Shanghai, most traders will not know the country of origin, and simply know that it came from Guangzhou, and perhaps Hong Kong before that.

Many traders acknowledged problems of environmental sustainability, including with sea cucumbers – some noted, for example, that the supply of BDM from certain locations was becoming more difficult to source, and many Hong Kong and Guangzhou-based traders knew of the PNG moratorium. One Hong Kong trader who had had long dealings with PNG exporters was very supportive in principle of the need to manage PNG’s sea cucumbers, saying that this was ‘good for the country’ and ‘good for the livelihoods of villagers’. They suggested that instead of a years-long moratorium, however, it would be more effective to have a closed season every year. One Hong Kong trader detailed their view that the PNG moratorium was not effective anyway, and that they knew of BDM
being smuggled out of the country in logging containers. Other traders reported that there was still PNG BDM on the market, but they may simply be marked as coming from Australia, or other countries. No sea cucumbers marketed as being from PNG were observed in Hong Kong. However, this would be unlikely to be the case even if they were from PNG, due to the widespread mislabelling of BDM (see section 4.1).

Other traders agreed with the broad notion that countries should sustainably manage their fisheries, suggesting that it could help to stabilise prices. However, most traders were unwilling to seriously engage with sustainability actions and initiatives, or saw how environmental governance could improve their business. As one Guangzhou-based trader put it: ‘Of course this is a very big problem. But I just sell these products. It’s the responsibility of governments to regulate their fisheries properly.’ This perspective resonates with the findings of a broader survey of Chinese consumers, which found that consumers view questions of environmental governance and sustainability very much as the responsibility of government, not of consumers or the market (Fabinyi and Liu under review b). Other traders were more straightforward in their view of environmental sustainability: ‘I don’t care about these things; if there are no sea cucumbers left there [in PNG] I can just go and buy them from somewhere else’ one Guangzhou trader stated.

Traders were sceptical about the potential of certification to improve their business. Most had not heard of the Marine Stewardship Council, for example, and expressed a high level of cynicism towards other certification schemes. One noted, for example, how ‘everyone in China knows that these certifications are just bought by companies anyway, and aren’t actually worth anything, so no-one will pay extra for them’ (see also Fabinyi and Liu 2014; Fabinyi and Liu under review a, b). While there is some evidence of Chinese consumers willing to pay more for environmentally sustainable seafood (Xu et al. 2012), there is not currently a large market for this. However, there is a significant and growing market for organic foods, and consumers are very keen to eat food that is considered safe, because of the high prevalence of food safety crimes and scandals in recent years (Fabinyi and
Liu 2014). Some farmed *A. japonicus* sea cucumbers are sold with the national Chinese organic certification in Beijing, and much of the frozen BDM and other types of seafood sold in Beijing supermarkets is sold with labels emphasising ‘pollution-free’, ‘natural’ characteristics.

### 6. Discussion
PNG BDM exporters will face a range of challenges and opportunities in the Chinese market if exports begin again. Overall, demand for BDM is slowing, which is reflected in lower prices for many products. The anti-corruption campaign led by the Xi administration and the broader slowdown of the Chinese economy appear to be the two key factors behind this reduced demand. However, given that most BDM is not in the absolute highest echelon of luxury products, and that PNG exports many lower-valued species of BDM as well, these trends may not have the same level of impact as for the most highly priced seafood products. Although demand may be slowing, therefore, BDM is likely to continue to be sold in the Chinese market for many years to come as China’s economy continues to expand, albeit more slowly.

A consistent theme among all traders was that they pay more for and prefer to buy product that is of high quality. When traders did have knowledge of PNG product, it was almost universally regarded as being poorly processed. Training and education on how to process BDM to the best standards should therefore be a key priority of industry figures in PNG (see Purcell 2015; [http://scu.edu.au/environment-science-engineering/index.php/125](http://scu.edu.au/environment-science-engineering/index.php/125))

Key challenges, relating both to governance of the trade and to understanding of the trade, relate to the murky legal nature of many trade practices. The grey trade between Hong Kong and Guangzhou appears to be thriving and an important element of the BDM chain. While there have been many reports of intermittent crackdowns (Godfrey 2014, 2015a), interviews mostly suggested that trading through Hong Kong to avoid import taxes remained a common practice. In addition to the tax implications, the grey trade also significantly reduces the traceability of most BDM in China and increases the likelihood of mis-reporting.
The prevalence of grey trading also impacted upon the ability to generate detailed and accurate information from traders. Guangzhou-based traders were particularly sensitive talking about details of the trade between Hong Kong and Guangzhou, and it is unlikely that it is in their interests to promote increased transparency about the trade. However, ongoing attempts by the mainland Chinese government to reduce grey trading suggests that there is some level of interest in promoting more transparent trading practices that adhere to legal norms. As a recent industry report argues, although stricter application of the rules may mean increased compliance costs for traders, higher standards should ultimately be of benefit to the industry (Godfrey 2015a).

Hong Kong traders, by contrast, were very concerned and often suspicious about environmentalist motives for the study. Hong Kong has witnessed intensive anti-shark fin campaigning in recent years, with the result that many dried seafood traders are highly suspicious of visitors. Many, for example, have prominent ‘no photography’ signs displayed on their walls and entrances, and some have plastic sheeting put up over walls and windows to hide their products from outside view. In contrast, interviews in Beijing yielded the best quality data due to the strong research networks built up there from previous research.

Any further research on the PNG BDM fish chain will need to take into account these key issues that shape both the nature of the trade, and the willingness of trade stakeholders to participate in research about the trade. More long-term fieldwork with traders in Guangzhou and Hong Kong could yield improved information about the trade. Other potential options for more detailed studies would include greater and more long-term engagement with industry and government bodies, including the GDSNIA, the Chinese Aquatic Products Processing and Marketing Alliance (www.cappma.org), and the Hong Kong Dried Sea Food and Grocery Merchants Association.
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