

THE MARKET FOR ELEPHANT IVORY IN CAMBODIA

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This study aimed to evaluate the potentially important and understudied market for ivory in Cambodia. Market surveys were conducted in June 2015 and January 2016 to assess the number of ivory items for sale, the price of items, and the demographics of the customer base in three Cambodian cities (Phnom Penh, Siem Reap, Sihanoukville). Each city was systematically surveyed to identify ivory vendors. In 2015, 10 retail outlets in Phnom Penh and five retail outlets in Siem Reap were identified as selling elephant ivory, offering a total of 502 and 282 ivory items, respectively. Surveys in January 2016 showed that the number of shops offering ivory had increased to 16 (670 items) in Phnom Penh and eight shops (446 items) in Siem Reap. No elephant ivory was found during either survey in Sihanoukville. Vendors reported that the main consumers of ivory were foreign, particularly Chinese nationals. This study shows that there is a persistent market for ivory in Cambodia, which may be driven largely by foreign buyers from China.

INTRODUCTION

The trade in ivory is a major threat to elephant populations in both Africa and Asia (Choudhury *et al.*, 2008; Blanc *et al.*, 2011; Gao and Clark, 2014; Christopher *et al.*, 2016). It is estimated that more than 100 000 African Elephants were killed between 2010 and 2012 for their ivory (Wittemyer *et al.*, 2014), and more recent estimates indicate about 20 000 elephants are killed annually (CITES, 2016). The African Elephant *Loxodonta africana* and Asian Elephant *Elephas maximus* are listed in Appendix I of the Convention on International

Trade in Endangered Species of Wild Fauna and Flora (CITES); such a listing bans international commercial trade. However, domestic trade of ivory still continues in many countries (Martin and Stiles, 2008). Mainland China, Hong Kong and Thailand have been identified as major ivory consumer markets (Milliken *et al.*, 2013; Underwood *et al.*, 2013; Wittemyer *et al.*, 2011), while Viet Nam, Lao PDR and Cambodia are considered gateways for ivory moving to China (Stiles, 2008; Nijman and Shepherd, 2012a).

BACKGROUND

In recent years, there has been an increase in seizures and reports of trafficking of African ivory through Cambodia, with more than three tonnes in one seizure alone in 2014—the largest ever recorded in the country (Sovuthy and Blomberg, 2014; Gray *et al.*, 2017). Cambodia was first identified in the Elephant Trade Information System (ETIS) analysis to CITES as a Party “important to watch” with regard to monitoring the illegal trade in ivory (CITES, 2014). In 2016, an updated analysis from ETIS identified Cambodia as a “country of secondary concern” (Milliken *et al.*, 2016), a ranking of greater concern. The patterns in ivory consumption have been studied intensively in other Asian countries (Martin and Vigne, 2011; Nijman and Shepherd, 2012a,b; Nijman and Shepherd, 2014), however, very little is known about the status of ivory markets in Cambodia. Although ivory items are sold to foreign tourists, Cambodians also have an appetite for ivory. The Khmers believe that owning an ivory Buddha amulet or other ivory item brings good luck, prosperity and good health (Martin and Martin, 2013). Cambodia’s economic growth has held up

well despite domestic uncertainty and instability in neighbouring countries (World Bank, 2014). Previous research has shown that wealth is a strong driver of demand for wildlife products in Asia (Gault *et al.*, 2008; Drury, 2009; Gabriel *et al.*, 2012) and Cambodia could therefore become a major consumer of ivory in the near future.

The purpose of this study was to evaluate the Cambodian ivory market through a series of surveys to identify the presence and quantity of ivory available for sale in three major Cambodian cities and thus hope to fill a critical knowledge gap on the scale of the Cambodian domestic ivory market.

LEGISLATION

The trade in ivory of Asian Elephants has been prohibited in Cambodia since 1994, and the country ratified CITES in 1997. Endangered species, including the Asian Elephant, are protected under Cambodian domestic legislation: possession, stocking, transporting, trading, export and import of this Class I species is prohibited. Illegal trade of Class I species can result in imprisonment of an offender for between five and 10 years, with the term doubled for multiple violations. However, Cambodian legislation does not cover wildlife originating from outside the country; this means that domestic trade in African ivory is not yet prohibited under Cambodian law (CITES, 2014). A current wide-ranging review of Cambodia's environmental legislation, the Natural Resource and Environmental Code, is currently being led by the Ministry of Environment. It is hoped that this will criminalize the sale and trade of all IUCN threatened species and those listed in CITES Appendix I, as well as Appendix II-listed species (and non-native species) that are not accompanied by the requisite permits.

METHODS

Market surveys were conducted in Phnom Penh, Siem Reap and Sihanoukville. In each city, surveys took place on two occasions between 20 June and 7 July 2015 (the low tourist season in Cambodia) and 4 and 21 January 2016 (the high tourist season).

Every street in the city centres was systematically surveyed, and all outlets where elephant ivory may have been offered for sale, such as shops selling jewellery and wood carvings, souvenir shops, luxury hotels, casinos and markets, were visited. A native Khmer speaker accompanied the Vietnamese principal investigator on all surveys. Vendors were interviewed to ascertain where they obtained the ivory, the nationality of the main buyers, whether or not they sold ivory on the internet, and if the vendors knew where any ivory carving workshops were located.

Data on the number and price of elephant ivory items, as well as details of the shop owners, the number of employees and their country of origin



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Ivory carving of Buddha's head for sale at a shop in Phnom Penh, January 2016.

were recorded, as was information on the presence and type of elephant ivory substitutes (for example, animal bone, ivory from other species, plastic and resin). Elephant ivory was easily identifiable based on the texture, colour and the distinct Schreger lines and angles.

The retail prices stated in this report are the asking prices. Both US dollars (USD) and Cambodian Riel are widely used in Cambodia, however, ivory prices were often stated in US dollars and Chinese Yuan.

Photographs were taken whenever possible; most vendors did not object in open places, such as markets, however this proved to be very difficult in shops. The authors were only able to locate one ivory carving workshop in Phnom Penh. The prices for ivory were requested at every shop, although most ivory items on display bore price tags. Only items on display were recorded.



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Ivory carver in Phnom Penh, July 2015.

Item	Phnom Penh (2015–2016)		Siem Reap (2015–2016)	
	No. of items	Average price (USD)	No. of items	Average price (USD)
Bangle	109	669	163	653
Beads	96	437.5	60	530
Buddha figurines	524	322	106	358
Chinese figurines	102	282	221	572
Chopsticks	13	538	6	493
Earrings	3	80	-	-
Hankos	27	350	16	408
Necklaces	12	613	35	438
Pens	6	500	6	337
Pendants	95	575	57	224
Rings	161	170	58	124
Raw tusk	6	1834	-	-
Uncarved ivory	5	140	-	-
Tusk tips	13	121.5	-	-

Table 1. Quantity and asking price (USD) of observed ivory items in Phnom Penh and Siem Reap between June 2015 and January 2016. - = no data were recorded during the survey

RESULTS

Trade in ivory

A total of 110 shops were surveyed in Phnom Penh, 51 shops in Siem Reap and 29 shops in Sihanoukville. Most of the surveyed shops sold items made from elephant ivory substitutes, mainly plastic, resin and bone. In 2015, only 10 retail outlets in Phnom Penh and five retail outlets in Siem Reap were identified as selling real elephant ivory, offering a total of 502 and 282 carved items respectively. Within six months, the number of shops offering ivory in Phnom Penh had increased by 70% (n=17) and the number of items by 33.5% (n=670). Siem Reap also showed a 60% increase in the number of shops (n=8) and a 58% increase in the number of items (n=446) (Table 1). No retail outlets in Sihanoukville were found selling elephant ivory during either survey.

During the second survey, the staff in 11 of the shops in Phnom Penh and all shops selling ivory in Siem Reap identified Chinese nationals as their main customer base. Three ivory shops in Phnom Penh identified Cambodians as their main customers for ivory products, and two did not answer the question. Of the shops selling elephant ivory in Phnom Penh and Siem Reap, almost all had shop sign-boards in Chinese Mandarin and employed Mandarin-speaking staff. Often, large shops in Phnom Penh and Siem Reap had staff that spoke Mandarin, Cantonese, Vietnamese, Thai, Japanese, Korean and English to assist international customers.

In total, the survey also showed that 41% of the ivory outlets (n=7) in Phnom Penh and 63% of the ivory outlets (n=5) in Siem Reap were Chinese-owned (by either Chinese nationals or Chinese Khmer). Approximately

35% of elephant ivory items observed were Buddha amulets (n=660), 20.5% were other jewellery pieces (bangles, bracelets, rings and necklaces) (n=391), and 19.2% were Chinese figurines (Chinese gods, Chinese lions and dragons) (n=365). Other commonly sold items were chopsticks, pens and animal figurines. Forty-three ivory name seals were also recorded in these shops. During the survey, the investigators also encountered a number of ivory substitute items that were carved into the shape of male genitalia; the retailers stated that these were mainly purchased by Japanese tourists. Six raw and unpolished tusks recorded in Chinese-owned shops in Phnom Penh were said to derive from Cambodian elephants. The authors also observed one large whole tusk worked in a Chinese carving style (hollowed tusk with small, elegant figures); this tusk was said to be for display purposes only and was not for sale. No ivory from other species was found during this survey.

The number of items did not appear to be distributed evenly between Phnom Penh and Siem Reap. Results from independent samples using the Mann-Whitney U test showed that more items, such as ivory beads (U=81.500, $p<0.05$, Chinese figurines (U=64.000, $p<0.05$) and ivory bangles U=93.000, $p<0.05$) were found for sale in Siem Reap over Phnom Penh in both surveys. The price of these items also appeared to be higher in Siem Reap than in Phnom Penh (beads: U=81.500, $p<0.05$; Chinese figurines: U=59.500, $p<0.05$; bangles: U=95.000, $p<0.05$).

The number and price of items were also different between the two sample periods. There were more Buddha statues during the second survey (January–February 2016) than what was observed in June–July 2015 (U=98.500, $p<0.05$), and prices were also higher during this time (U=99.500, $p=0.01$).



Ivory jewellery for sale in a shop in Siem Reap which the owner claimed derived from African Elephants.

Origin and monetary value

Most vendors were forthcoming with information about their products and customers. However, they were reluctant to provide information on elephant ivory craftsmen. Nine different shop keepers/owners stated that their ivory came from Cambodia, five of which were Khmer-owned shops. The investigator was told by a Khmer shop owner that Asian ivory is stronger and better quality than African ivory. Another shop owner indicated that wealthy Khmer citizens prefer to pay for a hunter to hunt an elephant in the forest to acquire its tusks than to buy carved ivory items from shops. The carving of the ivory appeared to be of high quality, with items in Chinese-owned shops superior to those available in the Khmer-owned shops. A Khmer vendor indicated that there are only two good ivory craftsmen in Cambodia and that the Vietnamese are better at carving ivory; for this reason, he would send raw ivory across the border to Viet Nam to be carved and bring the items back to Cambodia to sell. All the shopkeepers in Chinese-owned shops appeared to have very limited knowledge of the origin of the products they sell, stating that their Chinese bosses would go abroad once every few months and bring carved ivory back for sale.

During the first survey there was one Chinese-owned jewellery shop located on the main tourist street (Pub Street) in Siem Reap that had 54 ivory items for sale, as well as products from other threatened and protected species: for example, three dried bear gall bladders and a small bag of pangolin scales were observed. This shop also had dried herbs for traditional Chinese medicine (TCM) on display, seemingly for Chinese tourists as all signs and labels were written in Mandarin. The owner of this shop was also a Chinese national and only able to communicate in Chinese or using very limited English. At the time of the investigation, a member of a group of

10 Chinese tourists visiting the shop purchased one of the dried bear gall bladders using Chinese Yuan. This shop was not found during the second survey, having either moved or closed down. In addition, 88% of shops with ivory (22/25) in 2016 also offered a range of other wildlife products, such as claws, teeth, horns, pangolin scales and bear gall bladders.

The authors compared the number and price of items in the Chinese-owned shops and Khmer-owned shops. The former had more necklaces ($U=114.000$, $p<0.05$) and beads ($U=91.000$, $p<0.05$) and these items were also more expensive than those in Khmer-owned shops (necklace: $U=114.000$, $p<0.05$; beads: $U=102.500$, $p<0.05$). There was no significant difference between the number of Chinese-owned shops in Phnom Penh and Siem Reap ($X^2=2.16$, $p=0.14$) in the two sample periods ($X^2=0.07$, $p=0.93$).

Based on the number of ivory items for sale, there was an estimated USD128 275 of ivory for sale in June–July 2015, and USD432 374 available in January 2016. Two uncarved tusks were observed for sale in one outlet with an asking price of USD3500 each, or USD6000 for the pair. Prices for carved ivory items appeared to be more expensive in Chinese-owned shops than Khmer-owned, and also more expensive in Siem Reap than in Phnom Penh (Table 1), probably because Siem Reap attracts a greater number of tourists. Fake elephant ivory made of bone, resin, or plastic was also differently priced based on location and shop ownership. Fake elephant ivory items made of bone, resin, or plastic on sale in Siem Reap were also more expensive than those in Phnom Penh, and fake ivory items found in shops in open markets were less expensive than those in jewellery shops. For instance, the asking price for a 2 cm-wide bangle made of resin was USD70 in Siem Reap and USD50 in Phnom Penh, while a similarly sized ivory bangle was USD1020 in Siem Reap and USD980 in Phnom Penh.

DISCUSSION

The surveys show that ivory products are openly available for sale in two major cities in Cambodia; further, it is possible that demand is growing given the increase in the number of shops selling ivory over a six-month period, although demand could be seasonal based on tourist visits. Ivory on sale in the majority of shops appeared to be targeted at Chinese nationals—either tourists or immigrants. Therefore, there is a real risk that an increase in the number of Chinese tourists (Ngamsangchaikit, 2015) could drive a major increase in the purchase of ivory in Cambodia.

The domestic ivory trade in Cambodia

The scale of the illegal ivory trade in Cambodia might be small, but the presence of a market shows the existence of a network of individuals linked to the global wildlife trade. Throughout the region there has been an increase in the ivory trade in recent years (Lao PDR: Nijman and Shepherd, 2012; Myanmar: Nijman and Shepherd, 2014; and China: Gao and Clark, 2014). These data from Cambodia point to the existence of an end-use ivory market demand in the country (Milliken *et al.*, 2013). The findings are supported by other regional studies which have shown that the market for carved ivory items is mainly driven by demand from Chinese nationals (Guangzhou, China: Martin and Vigne, 2011; Vientiane, Lao PDR: Nijman and Shepherd, 2012a,b; Mong La, Myanmar: Nijman and Shepherd, 2014).

In 2002, there were 55 retail outlets offering 1683 ivory items in Phnom Penh alone (Martin and Stiles, 2002). The number of ivory shops declined steadily to 48 retail outlets in Phnom Penh, with 981 items in 2013 and three outlets in Siem Reap with 36 items (Martin and Martin, 2013). Both results do not include the retail outlets that keep much of their ivory stock out of sight. The survey findings show that although the number of shops offering ivory remains relatively small, more ivory items were recorded per shop in Phnom Penh (on average 52.4 items in 2015 and 60 items in 2016 compared to 19.7 items in 2013), indicating that shops might be operating at a larger scale than before. In addition, five vendors with 282 ivory items were identified in Siem Reap in 2015 (on average 47 items per shop), and eight vendors with 446 items (55.7 items per shop) compared to three vendors with 36 items (12 items per shop) identified in 2013. Ivory prices recorded during this survey were similar to those from previous studies in Mong La, Myanmar (Nijman and Shepherd, 2014), southern China (Martin and Vigne, 2011), and Viet Nam (Stiles, 2009). It should be noted that new retail outlets were identified during the survey period, while others closed down. It was also observed by the authors that a large number of shops selling considerable quantities of ivory opened in both Phnom Penh and Siem Reap after the survey period. In addition, some Khmer-owned souvenir shops that did not offer ivory items in

the first survey period, had started selling ivory in 2016. These findings might indicate that Cambodia has a very fluid ivory market, which could be seasonal.

Most retailers stated that their ivory came from Cambodian elephants, however there are only 71 captive elephants in the country (J. Highwood, pers. comm. to T. Nguyen, April, 2016) and there has been little elephant poaching detected in Cambodia over the last decade (Gray *et al.*, 2016), whilst camera-trapping has also shown few wild elephants possess large tusks. The number of items recorded in this survey indicates that the amount of ivory for sale in the market far exceeds what could be provided from domesticated or wild elephants poached in Cambodia. In addition, the diameter of some large-sized bangles on display at several shops could only have come from large pieces of ivory taken from full tusks and not from the cut tips of domesticated elephants. Five vendors admitted that their ivory was sourced from Africa. In recent years, there has been an increase in seizures and reports of African ivory being smuggled through and to Cambodia: three tonnes of ivory in 2014 (Sovuthy and Blomberg, 2014; Gray *et al.*, 2017); three seizures in 2016 included 600 kg in August (Agence France-Presse, 2016); one tonne in November (VnExpress, 2016) and 1.5 t in December (Soumy, 2016). Given the large amounts, and anecdotal evidence, it is likely that ivory for sale in Cambodia mostly comes from Africa.

The consumers and their perspective on ivory

The social value of ivory, both in monetary terms and as a status symbol, is rooted in a time when only a privileged few owned ivory (Gao and Clark, 2014). Therefore, in addition to its cultural and aesthetic value, owning carved ivory may give owners a sense of prestige (Gao and Clark, 2014). According to religious and traditional beliefs, ivory is also considered a symbol of good luck, good health, and intelligence (Martin and Martin, 2013; Gao and Clark, 2014). Ivory beads, Buddhist bracelets, pendants of Buddha figurines and statues were found in all of the surveyed shops and were said to be purchased by both Cambodian and Chinese-speaking customers. Results from this survey show that the price of ivory products (such as necklaces and beads) is higher in Chinese-owned shops than those owned by Khmer Chinese nationals. This might indicate that either Chinese-speaking tourists demand higher quality carved ivory than the local Khmer, or are more willing to pay a higher price for luxury items.

China has become a major source of both entrepreneurial and labour immigration to Cambodia (Pal, 2013). There is no reliable figure for the population of Chinese expatriates and migrant workers in Cambodia, however it has been estimated that their numbers could range from between 70 000 and 160 000, with approximately 3000 registered businesses and around 120 factories run by Chinese nationals (Pal, 2013). Chinese citizens are the second-largest tourist group in Cambodia, and the number of Chinese-speaking tourists

has increased by around 20% per year (Ngamsangchaikit, 2015). Cambodia won an award for being the best cultural and heritage tourist destination at the World Travel Fair in Shanghai (Ngamsangchaikit, 2015). In the first three months of 2015, 187 126 Chinese-speaking tourists visited Cambodia, a figure predicted to rise to one million annually by 2020 (Ministry of Tourism, 2015). A Chinese online travel website published an online news article entitled “Cambodia to become next shopping paradise for Chinese tourists” which reported on plans to build the world’s largest duty-free shopping centre funded by Chinese investment, which started in Siem Reap in 2016 (World Travel Online, 2015; Anon., 2016).

Chinese nationals are known for spending large sums of money abroad, especially on expensive and luxury items or on items that are cheaper than in China (KPMG, 2007), and often shop for gifts for their entire family and friends (Gao and Clark, 2014). This gift-giving culture is considered necessary for maintaining interpersonal relationships, especially during holidays such as Chinese New Year (Zhou and Guang, 2007; Drury, 2009; Jiang *et al.*, 2016). Such items are perceived to confer on the owner a high social standing as well as acting as a social code indicating access to rare, exclusive and desirable items (Kapferer, 2013). In addition, results from this research show that the price of ivory products during the second survey period of January 2016, shortly before Lunar New Year, was higher than those in the first survey period of June 2015. This could be due to high demand to purchase ivory as gifts during the Chinese Lunar New Year. Similar patterns have been found in the illegal trade of wildlife meat in China (TRAFFIC, 2010) and Viet Nam (Drury, 2009; Venkataraman, 2007). As the majority of vendors offering ivory in Phnom Penh and Siem Reap provide Chinese Mandarin-speaking staff and/or were owned by Chinese nationals, it is clear that the main consumers of ivory items in Cambodia are foreign buyers from China.

Shops owners also stated that Japanese tourists often visited their shops to buy hankos (Japanese rounded name seals), ivory beads and accessories. The demand for ivory in Japan has significantly decreased, thanks to conservation and behaviour change and demand reduction efforts since the 1980s, however ivory is one of the most frequently traded wildlife products online in this country (Matsumoto, 2015). Hanko is the most popular ivory item for sale online, followed by accessories such as necklaces and musical instruments. Whole tusks and ivory tips were also found on online websites (Matsumoto, 2015). In 2014, Cambodia welcomed over 200 000 Japanese tourists to the country (Ministry of Tourism, 2014). Although the number of hankos found during this survey was small (43 items), they appeared in almost every outlet visited, together with ivory substitute items targeting Japanese consumers, which might indicate that there is a small demand for ivory products from Japanese tourists.



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Ivory substitutes (bone and resin) for sale in an open market in Phnom Penh, 2015.



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Offcut of ivory on display in Siem Reap, January 2016.

Law enforcement regarding illegal wildlife trade appears to be lacking in the surveyed cities. Although there have been several reports of the prosecution of ivory smugglers in Cambodia in recent years (Kaliyann, 2014; Sovuthy and Blomberg, 2014; Gray *et al.*, 2017), there are very limited data from Cambodia in the Elephant Trade Information System (ETIS) database. China is recognized as the main consumer country for ivory globally (Milliken *et al.*, 2013; 2016). Previous studies have shown that China’s demand for ivory is no longer geographically restricted to mainland China as the demand fuels the illegal trade of ivory in neighbouring countries (Stiles, 2008; Nijman and Shepherd, 2012a; Milliken *et al.*, 2013). Results from this research suggest that demand from Chinese nationals for elephant ivory in South-east Asian countries such as Cambodia might increase rapidly if China does indeed close its own domestic ivory markets and strengthen law enforcement in relation to the illegal ivory trade as their government is promising to do, although the risk of carrying ivory back to mainland China will be much higher than before.

CONCLUSIONS

The survey results show that, although Cambodians have an appetite for ivory, the ivory markets in Cambodia are mainly fuelled by foreign demand, particularly Chinese nationals, and there may be a small demand for ivory products from Japanese tourists.

The market is still relatively small compared to other regions in South-east Asia; however both the number of shops and quantity of items increased very quickly within the six months of the survey period. Consumer groups in Cambodia are willing to pay high prices for ivory items, and some may even be unaware of the poaching of elephants as well as the illegal trade of ivory (WildAid, 2014). To highlight the issue, among measures introduced by China to curb the illegal trade in ivory is the transmission of mobile phone messages warning tourists travelling from China to resist purchasing ivory and transporting it back to China (Zhang, 2013).

Based on the volume of the trade, the size of ivory items, and the recently very low levels of elephant poaching in Cambodia, it is likely that much of the ivory originates from elsewhere, probably Africa. Therefore, the logical next step is the use of DNA analysis to identify the origin of the ivory on sale (e.g. Wasser *et al.*, 2004; Gupta *et al.*, 2006; Singh *et al.*, 2006). This information will be very useful to help encourage the Cambodian government to enact stricter laws concerning the international and national trade in ivory. It is vital for Cambodia to tackle policy loopholes and tighten control of ivory trade in markets and at borders as well as improve public awareness of the impact of consumption of elephant ivory. However, campaigns should be more specifically targeted and based on consumers' perspectives and motivations. Education outreach and campaigns should involve current non-participants who may have an important role to play in this issue. For example, Cambodian and Chinese tourism ministries and tourism agencies could work together to raise tourists' awareness of their impact on the local wildlife, as well as to global biodiversity.

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