

# Effective law enforcement in Ghana reduces elephant poaching and illegal ivory trade

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## Abstract

Ghanaians have a long history in ivory, both for export and for carving. From the 1970s to the early 1990s, however, most of Ghana's elephants were killed either by local farmers in retribution for human-elephant conflict or by poachers for the ivory trade. Ghanaian ivory craftsmen used the tusks primarily to make jewellery and figurines over this time. These curios were mostly sold in Accra, the capital, but due to lack of market surveys, very little data are available.

In July 2010 I surveyed the retail outlets selling ivory in Accra and counted only 10 items on display in an art gallery and 85 items brought to me in five of 186 souvenir shops and stalls I visited. The reason there were so few items was that the Ghana Police Service and Wildlife Division of the Forestry Commission had carried out a raid in November 2008 in the main curio market confiscating several hundred kilos of ivory items, fining and imprisoning the dealers. Since then the vendors in Accra have feared to sell ivory.

Elephant poaching declined at the start of the 21st century thanks to improved law enforcement. In 2004 a new system was introduced that involves performance and adaptive management through the monitoring of patrol effort and observations by the field-staff in the Wildlife Division. The combined effect of performance and adaptive management was that the number of effective days spent in the field by an average Wildlife Guard doubled, which dramatically lowered the number of elephants killed illegally. In addition, governance improved, Ghanaians developed greater respect for the law and there was less corruption, which reduced elephant poaching and the sale of ivory objects.

This paper concludes that Ghanaian examples of greater patrol staff performance through improved monitoring—and of successfully raiding outlets selling illegal ivory—are a sound approach to reducing elephant poaching. While improving anti-poaching exercises is more difficult in some African range States, the Ghanaian example of shop raids is easier to implement and has also worked in countries such as Cameroon and Ethiopia. Other countries in Africa, especially Cote d'Ivoire, Democratic Republic of Congo, Nigeria and Senegal, need to follow the example of Ghana in carrying out official raids on ivory in retail outlets.

**Key words:** Ghana, ivory trade, elephants, poaching, law enforcement

## Résumé

Les Ghanéens avaient une longue histoire avec l'ivoire; ils l'exportaient et ils le sculptaient. Entre les années 70 et le début des années 90, cependant, la plupart des éléphants du Ghana ont été tués par les fermiers locaux en rétribution au conflit homme-éléphant ou par des braconniers pour le commerce d'ivoire. Les artisans d'ivoire ghanéens ont principalement utilisé les défenses pour faire des bijoux et des figurines pendant cette période. Ces objets d'art étaient vendus surtout à Accra, la capitale, mais en raison du manque d'études du marché, peu de données sont disponibles.

En juillet 2010 j'ai étudié les débouchés vendant l'ivoire au détail à Accra et j'ai compté seulement 10 articles en vente dans une galerie d'art et 85 articles qui m'ont été apportés dans cinq des 186 magasins et boutiques de souvenirs que j'ai visités. La raison pour laquelle il y avait très peu d'articles était que la police du Ghana et la Division de la Faune de la Commission des Forêts avaient effectué une rafle au mois de novembre 2008 sur le marché principal des objets d'art et avaient confisqué plusieurs centaines de kilos d'articles en ivoire, en faisant payer des amendes

aux revendeurs et en les emprisonnant. Depuis lors les vendeurs à Accra ont peur de vendre l'ivoire.

Le braconnage d'éléphant a diminué au début du 21<sup>ème</sup> siècle grâce à une amélioration de l'application de la loi. En 2004 on a introduit un nouveau système qui comprend la performance et la gestion adaptative par le suivi des efforts de patrouille et des observations par le personnel de terrain dans la Division de la Faune. L'effet combiné de la performance et de la gestion adaptative a été que le nombre de jours effectifs passés sur terrain par un écoparce moyen a doublé, ce qui a nettement réduit le nombre d'éléphants tués illégalement. En outre, la gouvernance s'est améliorée, les Ghanéens ont développé plus de respect pour la loi et il y a eu moins de corruption, ce qui a réduit le braconnage d'éléphants et la vente des objets en ivoire.

Ce document conclut que les exemples ghanéens d'une meilleure performance du personnel de patrouille grâce à une surveillance améliorée et des rafles réussies contre les détaillants qui vendent l'ivoire illégal sont une approche solide pour réduire le braconnage d'éléphants. Alors qu'il est plus difficile d'améliorer les exercices anti-braconnage dans certains états de l'aire de répartition, l'exemple ghanéen de rafles de police sur les magasins est facile à mettre en œuvre et cette approche a également marché dans les pays tels que le Cameroun et l'Éthiopie. D'autres pays en Afrique, surtout la Côte d'Ivoire, la République Démocratique du Congo, le Nigeria et le Sénégal, doivent suivre l'exemple du Ghana et faire des rafles de police sur les débouchés vendant l'ivoire au détail.

## History of Ghana's ivory trade

Ghanaians, especially the Akan-speaking peoples, have used ivory for over 500 years. The best-known objects made were side-blown horn instruments that were used as part of the regalia of the kings of the Asante. Many of these ivory horns were individually named and had specific roles. Some were adorned with human jaw-bones from enemies of the State (Ross 1992). Today ivory horns are still part of the regalia of the Asantehene's Royal Court and of the lesser courts throughout the south-west part of the country.

From the 1650s onwards, when Europeans introduced firearms to the coastal people, Ghanaians used them to hunt elephants in the forest. In the



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Figure 1. These thin 2.5-cm bone carvings were selling for USD 10 for the pair in a smart Accra beach hotel.

northern savannahs, beyond the influence of European-made goods, hunters used traditional bows and arrows to kill elephants until the 19th century (Kwarteng 2008). The historian K.Y. Daaku believes that few tusks were exported from 1600 to 1720 (Ross 1992).

By the 19th century ivory exports had increased considerably due to European demand and modernized firearms. From 1879 to 1886, 30,720 kg of tusks (a yearly average of 4389 kg) were exported, 87% to UK, 11% to Germany and 2% elsewhere. Between 1920 and 1932, exports halved to an average of 2218 kg per year, probably because the elephant habitat was being destroyed for export crops and because former hunters were becoming farmers (Kwarteng 2008).

According to Kwarteng (2008), legal exports of tusks from Ghana ended in the mid-1930s. CITES figures, however, show there were some legal exports of ivory from 1979 to 1987, but only 75 kg plus 128 tusks (Parker 1989). During this period there also would have been some illegal trade from poached elephants, but this cannot be quantified.

Before 1979 there were no reliable data on the number of elephants in the country, so information on ivory trade cannot be extrapolated from elephant numbers. Most researchers believe there was a significant decline in the elephant population from the 1950s to the 1990s due to human population increase, which led to growing human-elephant conflict and elephant deaths. There was also serious commercial elephant poaching for the tusks and meat (Government of Ghana 1991; Barnes et al. 1995; Okoumassou et al. 1998; Sam et al. 1998; Barnes et al. 1999; Boafo et al. 2004; Bouche 2007; Jachmann 2008a; Kwarteng 2008).

## Methodology

I carried out fieldwork in and around Accra from 11 to 17 July 2010. I visited the main markets, hotels, shopping malls, art galleries and souvenir shops in order to find out whether ivory was available for retail sale. I interviewed shopkeepers, especially in the largest craft market in Accra called the Arts Centre, and I talked to the Chairman of the Greater Art and Craft Dealers Association of the Arts Centre. I spoke to members of the Wildlife Division, Ghana Wildlife Society, the Ghana Police Service—including Interpol—and the Customs Excise and Preventive Service. I visited the Forestry Commission library to research unpublished reports and learn about Ghana's ivory legislation. I went to the National Museum to see old ivory items carved in Ghana, and visited several biologists studying Ghana's elephants and wildlife conservationists.

## Legislation

Ghana's legislation regarding elephants and the trade in their products dates back to 1901 when a minimum weight per tusk for domestic sale and export was introduced. The 1923 the Wild Animals Preservation Ordinance increased the weight to a minimum of 25 pounds (11 kg) per tusk in order to reduce the killing of immature cows and calves. The 1961 Wild Animals Preservation Act prohibited the killing of young elephants and all females with young; this Act also permitted the government to confiscate all elephant tusks weighing less than 25 pounds. By 1971, under the Wildlife Conservation Regulations, all hunting, capturing and destroying of elephants was prohibited and a 'game trophy export permit' was required to export tusks. In 1983 the Wildlife Conservation (Amendment) Regulations made it an offence to acquire or be in possession of any ivory unless authorized in writing by the Chief Game and Wildlife Officer. In 1988 under the Wildlife Conservation (Amendment) Regulations, persons owning ivory would have to pay a fee of Ghanaian cedis (GHS)100 for jewellery, GHS 400 for worked ivory and GHS 400 for each piece of raw ivory. An export fee of 59% of the value of the ivory was also introduced that year (Republic of Ghana 2002; Kwarteng 2008).

The first tusk registered under the 1983 regulations was on 14 February 1984 when an architect registered two polished tusks weighing a total of 19.4 kg (Cletus Nateg, Operations Manager, Protected Areas,



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Figure 2. Crude cow bone animal figurines were for sale in several souvenir shops and stalls in Accra. They were newly carved in Ghana.

Forestry Commission—Wildlife Division pers. comm.). According to the hand-written records in the 'Registration of Ivory (Elephant Tusks)' book, which is kept in the Wildlife Division, from 1984 to 1987, 1580 kg of ivory were registered plus some items that did not have weights; these exclude government stocks. In 1997 the Wildlife Division registered another 8.45 kg of ivory followed by 36.2 kg in 2000, mostly ivory from chiefs' regalia. Thus from February 1984 to June 2010 officials had registered at least 1625 kg of ivory belonging to 110 individuals. No doubt there is more ivory owned in Ghana that has not been registered.

No licences for the sale of ivory items have been given for many years; officials will not give them out. Thus all ivory, including antiques, for sale in Ghana is illegal (Nana Kofi Adu-Nsiah, Executive Director, Forestry Commission—Wildlife Division, pers. comm.). Ghana joined CITES in 1976, which since 1990 has prohibited Ghana (as for most member states) from importing and exporting commercial ivory, except antiques and hunting trophies, although there has not been elephant sport hunting in Ghana for decades.

All undated interviews referred to in this manuscript were carried out during fieldwork in July 2010.

## Results

### *The killing of elephants since the late 20th century*

According to IUCN there were 789 'definite' elephants in Ghana in 2006 with perhaps another

387 classified as 'probables'. The largest number was in Mole (401) and Digya (357) National Parks (Blanc et al. 2007). Previous estimates by Douglas-Hamilton of 3500 elephants in 1979 and by Burrill and Douglas-Hamilton of 2964 elephants in 1987 (Cobb 1989) indicate that there were many more elephants in the country in the 1970s and 1980s than in 2006. Others studying elephants in Ghana agree that their numbers declined steeply in the late 20th century (Jachmann 2008a; Kwarteng 2008). The Environmental Investigation Agency (1994) stated that the country's elephant population declined by some two-thirds in the 1980s because of a flourishing commerce in ivory with traders from Cote d'Ivoire providing arms and ammunition to the poachers in Ghana.

The decline in elephant numbers over the past forty years was due mostly to farmers and government control officers killing crop-raiding elephants and also to commercial poaching for the ivory and meat carried out by Ghanaians and occasionally by poachers from neighbouring countries. With the rapid expansion of cocoa plantations, forests were cut down and the elephant range in the forests was further reduced. Human population growth spread into elephant areas and human-elephant conflict increased; farmers retaliated against crop raiding by killing elephants. Government game scouts sometimes went further and followed elephants deep into the forests to kill them. Some of the ivory entered the illegal trade. Human-elephant conflict increased in the 1980s and early 1990s in the forest belt because game scouts often did not respond quickly enough to the farmers' requests for assistance and thus the farmers took increasing action themselves by killing elephants on their land and in the adjacent forest (Kwarteng 2008).

Commercial poaching for tusks from the 1970s to the early 1990s was particularly serious, especially for export. Cote d'Ivoire was a major market for ivory trade in West Africa (Dublin et al. 1995) and some of Ghana's tusks reached Abidjan, either for carving or for re-export. In northern Ghana, ivory smugglers could easily walk across the border into Cote d'Ivoire, and those poachers who were provided with guns from traders in Cote d'Ivoire often would have sent their tusks across the border back to these traders. There was also demand for ivory from local craftsmen to make jewellery and animal figurines to sell mainly to Europeans and Americans in Ghana. In the early 1980s there were around eight ivory

craftsmen in the Accra Arts Centre, where most carvers were based, mostly Ghanaians (Abu Adamu, Chairman of the Greater Art and Craft Dealers Association, Arts Centre, pers. comm.).

During this period the Department of Game and Wildlife (as it was then named) had an acute shortage of trained field personnel, vehicles and other equipment to fight illegal hunters. For example, in 1991, of the 127 approved and established senior posts in the Department only 40 were filled and these posts commanded a salary of only USD 600-1000 per year. In 1988 the Department possessed only two working pick-up trucks, two tractors, and 27 vehicles in disrepair that had been allocated for the 1,200,000 hectares of protected area under the Department's control. In 1989 the recurrent budget of the Department was USD 615,000 for the 650 staff (including casuals), 92% of which was used to pay salaries and other benefits to the staff (Government of Ghana 1991). Therefore there was extremely little funding for anti-poaching work and poaching consequently flourished.

By the early years of the 21st century elephant poaching in the main areas of their range (Mole, Kakum, Digya and Bia National Parks) appeared to have declined in Ghana. For example, in Mole National Park in the north-west, which has the largest elephant population in the country, poachers worked at night using torch lights or during the day when the Wildlife Division staff were not present. They used mostly single-barrel shotguns because ammunition for these was easy to obtain, but they occasionally had rifles as well. Most elephant and other wild animal



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Figure 3. These ivory male lions were probably carved in Cote d'Ivoire and were brought to the Arts Centre to sell clandestinely.

poachers were, and still are, Ghanaian farmers from surrounding villages who consider wildlife a free public resource from which they can make quick money (Government of Ghana 2005). The Mole elephants are most in danger when they leave the Park during the wet season and move south-west into poorly guarded forest reserves. Poachers inform one another by mobile phones when they see elephants in these areas. Some experts believe that more elephants are being killed outside than inside the Park (Hugo Jachmann, biologist, pers. comm.). Officials from the Wildlife Division believe, however, that only four elephants were poached in the entire country in 2009, mostly in Mole and Kakum National Parks (Adu-Nsiah pers. comm.).

One known incident in Kakum National Park occurred when officials interrupted three poachers in 2003 after they had shot two elephants with a .458 rifle. The poachers had to flee before they could remove the tusks. One was arrested on the road looking for transport. In his bag he carried the rifle and some elephant meat. He was taken to court and found guilty of four charges. He never went to prison but received a small fine and his rifle was confiscated (Nateg pers. comm.).

The poaching of large mammals declined in 2004 with the introduction of a system that checked the Wildlife Division's patrolling effort and their monitoring work. The system keeps a record of the number of staff on patrol, the exact duration of each patrol, the area travelled, the types, qualities and locations of illegal activity and the number of large mammals encountered by species and location. Halfway through 2009, all 13 terrestrial protected areas (not including coastal wetlands) under the control of the Wildlife Division had this improved system operating (Jachmann 2010). This project was supported by the SNV-Netherlands Development Organization and supervised by Hugo Jachmann, who has had many years of wildlife experience in Africa. The results in staff performance have been impressive. From 2005 to the end of 2007 patrolling performance in those areas with the new system increased from about eight effective days per staff member per month to 16 days. In Digya National Park staff patrol time was consistently high at 13 to 18 days each in the month; however, in Mole National Park, where guards were few and funding was the lowest per km<sup>2</sup> of the areas with the new system,

patrol days increased from six to eight per month for each guard. By the end of 2009, however, Mole staff numbers not only increased significantly, but effective patrol time was the highest for the country at 20 days per staff member per month on average (Jachmann pers. comm. October 2010). Overall, the new system has resulted in the decline in poaching of large mammals, including elephants. For instance, for all of the protected savannah areas, for the first five years of this programme, poaching incidents decreased an average of 22% a year. For the three protected forest areas, the decline was slightly less, 20% on average per year, because of poor visibility in forests compared with savannahs. This dramatic decrease in poaching was due to the improvement in the management of the Wildlife Guards' activities, which reduced commercial poaching for elephants considerably (Jachmann 2008a; 2008b; 2010).

### *Retail outlets selling ivory in Accra*

In July 2010 I visited 186 curio shops and stalls distributed all over Accra, which sell mostly locally crafted wooden items, stone jewellery and clothing. The only retail outlet that displayed ivory for sale—only 10 items—was one of two art galleries. This shop sold mainly Ghanaian paintings, pottery, wooden and stone sculptures, as well as traditional second-hand clothing. Inside a glass case on the ground floor were nine rather old plain bangles that were 1.5 cm wide selling for GHS 30 (USD 21) each. A Ghanaian from the northern part of the country collected these bangles to sell in the art gallery. There was one other ivory item for sale, a plain, traditional 35-cm side-blown horn hanging on the wall for GHS 600 (USD 429) which, according to the salesperson, was made in northern Ghana several decades ago. Also for sale in the art gallery were two old skirts with leopard skin pieces attached to them made in northern Ghana for GHS 1200 (USD 857) each. There were also six Ghanaian recently painted ostrich eggs, probably from ranches for GHS 200 (USD 143) each.

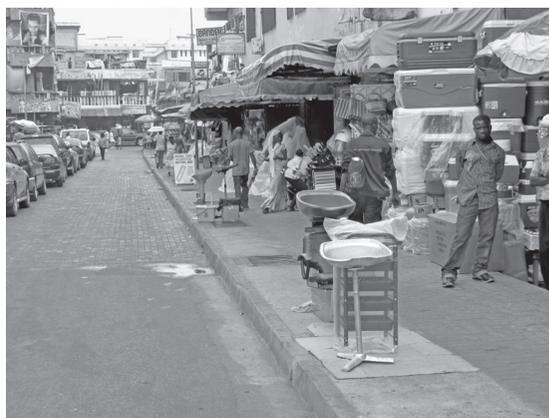
Although I saw no ivory displayed for sale anywhere else, vendors in five other outlets in the curio market within the Arts Centre, brought to me 85 ivory items when I asked for them. This huge market is composed of 175 shops and stalls selling handicrafts, mainly souvenirs to tourists, along with 303 clothing and fabric shops and a section with

workshops making furniture, drums, masks and other items mostly from wood. The Arts Centre has been in its present location near the sea in central Accra since 1982, at which time there were only 33 shops (Adamu pers.comm.).

Almost immediately after I enquired about ivory at the Arts Centre, the shopkeepers, within three to twenty minutes, brought ivory curios to show me. Some were hidden within the market while others came from nearby residents. Most were wrapped in brown paper to hide them. All the ivory items I was shown in the Arts Centre were recently carved. Nobody claimed they were antique. The vendor at the first shop showed me four ivory animal figurines, but he was reluctant to give prices. He said they were carved in northern Ghana. The second vendor offered three animal figurines: a 13-cm leopard from Cote d'Ivoire for GHS 1200 (USD 857), a 13-cm elephant for GHS 1500 (USD 1072) and a 6-cm hippo for GHS 400 (USD 286). The third shopkeeper brought five arm bangles for GHS 120–180 (USD 86–129) each, two beaded necklaces for GHS 800 (USD 571) and a 9-cm elephant for GHS 1500 (USD 1071). The vendor claimed they were from neighbouring countries. At the fourth outlet the vendor brought for me 51 pendants including 2.5-cm miniature tusks, hearts and elephants priced at GHS 30 (USD 21) each. He also showed me two beaded necklaces for GHS 150 (USD 107) each and one 9-cm hippo for GHS 1000 (USD 714). The fifth and final vendor offered me four animal figurines from 13–17 cm for GHS 1200 (USD 857) each, supposedly from Cote d'Ivoire. With bargaining it is possible to get reductions, such as at the last stall where the vendor offered me a 9% discount.

Prices for these animal carvings are very high compared with similar objects found in other countries in West and Central Africa. One possible reason is that the shopkeepers in the Arts Centre may not have owned the items themselves and were adding on a commission. Furthermore, the vendors are not familiar with prices elsewhere and due to their uncommonness the prices are higher than in other markets.

There were hundreds of ivory items available for sale in Accra before 2008, almost all on display in the Arts Centre, according to the Wildlife Division and to conservationists. The main explanation for why so few ivory objects were seen on display in Accra in 2010 (10 items) and from hidden sources (85 items) was that the vendors fear they may be arrested and their items confiscated. Before 2008 there had been no raids



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Figure 4 & 5. Central Accra is a main shopping area for Ghanaians and is lively and colourful; there were no shops with ivory in this part of the city.

or seizures of ivory items in the shops. In late 2008 officials collected information on where the largest numbers of ivory items were for sale; they correctly singled out the Arts Centre. On 15 November 2008 at about 0630 h as the shops were opening, members of the Ghana Police and Wildlife Division surrounded the Arts Centre. They then raided 11 shops, 10 of which had ivory. They confiscated several hundred kilos of ivory curios and seized crocodile skin bags. The shop owners and their assistants were arrested immediately for dealing in endangered wildlife products without a licence, and put into prison for one night until bail money was paid (Asare 2008). Most of the arrested shopkeepers were from northern Ghana and the items seized were mainly ivory animal figurines and jewellery that had been crafted in Cote d'Ivoire, Ghana, Nigeria

and Gabon (Adamu 2009). This case was still pending in the courts in July 2010.

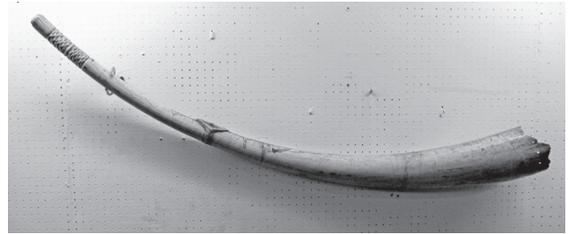
Every vendor I spoke to in the Arts Centre knew that it was illegal to sell ivory without a licence and that they would have no chance getting a licence as officials do not want an ivory trade. When the vendors returned to their shops with items to sell to me, they hid them in bags and showed them clandestinely at the back of their shops away from the tourists. Most became suspicious of me, especially when I asked questions and did not buy anything, and a few started to think I was a spy from an international conservation organization coming to help the authorities to get them arrested.

Despite their reluctance to talk, the dealers in the Arts Centre admitted that the main buyers of ivory items were Chinese, Americans (who especially like necklaces) and Europeans, in that order. The dealers also said that there were no ivory craftsmen still active in the country. Some of the vendors still deal illegally in a few crocodile skin handbags and drums with antelope skins. Business for curios in general does not appear to be thriving because there are nowadays too many retail outlets relative to the number of tourists, and aggressive touts harass the tourists, putting them off from buying items (Adamu pers. comm.).

### *New government efforts to close down Ghana's ivory trade*

Since the raid of November 2008 the Wildlife Division and the Police have not considered it necessary to carry out another raid in the Arts Centre nor elsewhere in Accra for illegal ivory because there has not been enough evidence of ivory sales, nor sales of other wildlife products. The Police, including Interpol, are active in Ghana and concentrate on higher priorities that include drugs trade, human trafficking, fraud and fugitives. The Police believe, however, that to improve wildlife product law enforcement, a workshop should be organized with officers from the Wildlife Division, Police, Immigration, Customs and Forest Department to learn from experts about endangered wildlife products (DSP Peter Abillah, CID Headquarters in Accra, pers. comm.).

The Ghana Customs and Preventive Service says that in the past larger quantities of ivory curios were illegally imported into Ghana from Cote d'Ivoire to sell to tourists, but this trade has now declined. Customs is not aware of ivory, either raw or worked, being smuggled in or out of Ghana's airports. There



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Figure 6. Such ivory musical instruments on display in the National Museum are called side-blown horns. Similar ones are still played during traditional ceremonies in Ghana.

are four sniffer dogs at the airports, but these are only used to find drugs, not ivory as in Kenya. Customs officials are aware, however, of bush meat, perhaps some from elephants, which is illegally exported in dried form to Europe.

All the government officials and other conservationists in Ghana I spoke to brought up the growing threat of the Chinese trading in ivory, both raw and worked. For example, several years ago, the Chinese obtained contracts to construct several sports stadiums in Ghana. While one was being built at Tamale, a town approximately 100 km east of Mole National Park, a Ghanaian middleman was arrested with tusks; he apparently planned to sell them to the construction company (Nateg, pers. comm.). It is believed that the Chinese from this construction site sent word that they would buy elephant and warthog tusks (Jacob Awere, Executive Director, Ghana Wildlife Society, pers. comm. and Jachmann pers. comm.); they apparently also requested hippo tusks (John Mason, wildlife expert in Ghana, pers. comm. October 2010).

### *Substitutes for elephant ivory*

The main substitute for elephant ivory carvings in Ghana is cow bone and very occasionally camel bone. Most of the cow bone curios are small, newly carved pairs of animals, such as giraffes or elephants, and sometimes humans. In mid-2010 they were on display for sale in the Arts Centre, one hotel curio shop, an art gallery, and a souvenir shop. All were crudely carved and inexpensive compared with ivory. For instance, a pair of human figurines, 10-cm tall, was offered for sale for only GHS 15 (USD 11), a necklace for GHS 20 (USD 14) and pair of 10-cm giraffes for GHS 21 (USD 15). The main buyers of ivory substitutes, as is the case in many countries, are European and American tourists.

Vendors named the substitute materials correctly, except on two occasions. In the hotel curio shop an inexperienced vendor said, probably through ignorance, that her bone necklaces were made of ivory although the prices were very low; and one vendor in the Arts Centre claimed his crude bone carvings, stuck on pieces of wood, were ivory and was trying to charge ivory prices!

## **Discussion and conclusion**

Compared with other West African countries, especially Cote d'Ivoire, Nigeria and Senegal, the trade in ivory in Ghana is small (Courouble et al. 2003). Probably no ivory craftsmen are practising the profession in Ghana nowadays, and few ivory items from neighbouring countries are smuggled into the country for sale as demand is low. The export trade of raw and worked ivory is also insignificant due to improved law enforcement in Ghana, and elephant poaching in the country has also been reduced.

The main reason for the scarcity of ivory objects seen in Accra's retail outlets is that the raid on the shops in the Arts Centre in November 2008, the first and only recent such action taken in Ghana, acted as a major deterrent for this illegal activity. Since the mid-1990s, with the successful implementation of multi-party elections, a freer press and less corruption, governance in Ghana has greatly improved (Briggs 2009). Thus the vendors of ivory objects fear the authorities and consequently do not want to sell ivory items. Those vendors who tried to sell me a few ivory items in mid-2010 knew ivory sales were illegal and were nervous, saying they did not want to be arrested and put in prison, as had happened in 2008.

In 1999 shopkeepers in Douala and Yaounde in Cameroon were offering on display for sale 6015 ivory items (Martin and Stiles 2000). Several crack-downs by the government, with the help of the Last Great Ape Organization, have resulted in no ivory items seen openly for sale in the former ivory outlets (such as the Central Arts Market and in the luxury hotels) in mid-2010 (Dan Stiles, ivory trade consultant, pers. comm. August 2010). Similarly, two shop raids by government staff occurred in Ethiopia in 2005 and in 2009, following under-cover work by TRAFFIC. From 3557 ivory items on display in the souvenir shops in Addis Ababa in 2004, numbers fell to 78 after the first raid, but crept up again to 1340 by July 2009, which urged the government to carry out the second raid (Milledge and Abdi 2005, Martin and Vigne 2010). Officials in

Ghana also need to ensure that the ivory items do not return to the shelves and if so, action would be needed again. At the moment no such raid is needed in Ghana due to the scarcity of ivory objects.

Shop raids in Africa by government authorities for ivory are one-off activities and much easier to manage, as well as being a fraction of the cost, compared with running anti-poaching units to protect elephants. They are highly effective in reducing demand for ivory in the shops, which helps to reduce elephant poaching. Raids are relatively simple to implement as ivory items are displayed openly for sale and are concentrated in the souvenir shops that officials can easily locate and visit. Such a law enforcement exercise is urgently needed for many countries in West and Central Africa.

Ghana has also successfully reduced elephant poaching because of improved governance in the country and a new anti-poaching system that was introduced in 2004. The new system, a combination of performance and adaptive management, which among other activities monitors the patrolling effort of the Wildlife Guards in protected areas, has doubled patrolling time; this has certainly helped elephants and other large animals. The system is operational in all Ghana's protected areas (under the Wildlife Division), while numbers of guards have doubled in Mole National Park (Jachmann pers. comm. October 2010). More patrol work would also help to stop elephants from wandering out of the Park into regions where they are more threatened. Ghana's new system of patrol monitoring would be wise to implement in other countries in West and Central Africa that have reasonable governance in order to reduce the poaching of elephants and other large mammals.

Overall, Ghana has demonstrated that with improved strategies for law enforcement, including shop raids on ivory (which has almost eliminated ivory items on display in retail outlets) and monitoring the work of patrol staff in protected areas (which has increased their productivity), elephant populations can be better secured. These initiatives need to be emulated in other elephant range States, where there is appropriate governance, to improve the security of elephants.

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