

**ASSESSMENT OF BUSHMEAT TRADE
DURING THE ANNUAL CLOSED SEASON
ON HUNTING IN GHANA**

(1ST AUGUST - 1ST DECEMBER 2001)



Prepared By



Conservation International Ghana
(In collaboration with FAO Regional Office for Africa)

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CONSERVATION INTERNATIONAL GHANA

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Mission Statement

Conservation International (CI) believes that the Earth's natural heritage must be maintained if future generations are to thrive spiritually, culturally, and economically. Our mission is to conserve the Earth's living heritage, our global biodiversity, and to demonstrate that human societies are able to live harmoniously with nature.

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1.0 INTRODUCTION AND STATEMENT OF THE BUSHMEAT CRISIS IN GHANA

1.1 Introduction

Bushmeat hunting has a long pedigree dating back to ancient times when hunting was done on subsistence basis and regulated by socio-cultural practices, i.e. norms, sanctions and taboos. Most of the various animal species were considered sacred, or totems and their exploitation restrained by taboos. Other animals were regarded as unclean and abhorred because of some misfortune in the past associated with those species or religious restrictions. Some animals were used as sacrificial or ceremonial animals for religious, cultural and festivals of some communities. Such animals or species were strictly protected by the various customary rites and practices.



Fig. 1a: Royal Antelope being prepared for sale

In the past few people were traditionally recognised as hunters by each community. Traditionally, hunting was carried out mainly in the dry season. This traditional hunting practice allowed animals to breed during the rainy season. Furthermore, there were certain days during the week when hunting was not allowed. Some forests and rivers were also considered as sacred groves and access to the public was limited, therefore, provided sanctuaries for the animals.

Bushmeat was harvested for meat, medicine and as major ingredient in local socio-cultural ceremonies or festivals, which were considered as part and parcel of the socio-cultural life of the people. In Ghana,

many traditional societies foster beliefs systems as well as social norms which encouraged or even enforced limits to exploitation of biological resources. This in effect ensured the sustainable utilization of all such natural resources. However, over the last three decades, economic change, population growth and other factors have brought far-reaching shifts in the sustainable traditional patterns of resource use (BSP, 1993) to an unprecedented increase in bushmeat hunting in the West and Central Africa to the extent that animals which were hitherto considered as sacred are now commonly sold in the markets.



Fig.1b Bushmeat Retailer

In recent years, there have been an increasing number of people, involved in the bushmeat trade, i.e. hunters, bushmeat traders, restaurants operators and exporters of wild animals. Hunting is now done in complete disregard to the age-old socio-cultural checks and balances which have promoted biodiversity conservation and enhanced food security of the local communities. The sizes of the animals are diminishing at a fast rate as dangerous methods of hunting, i.e. chemicals and sophisticated weapons are being used in hunting (Fig. 1a & 1b). The future of wildlife, food security and the sustainability of our ecosystems which support life in the Upper Guinea are in danger.

1.2 Legislative Framework for Wildlife Management in Ghana

The Wild Animal Preservation Act 43 of 1961 was enacted in accordance with Ghana's obligations as a party to the African Convention of 1900. The Wildlife Division of the Forestry Commission (formerly Wildlife Department) is the government agency that was legally mandated to protect and conserve Ghana's

wildlife resources. This mandate has been facilitated through the enactment of various legislative instruments in respect of the following, among others:

- establishment of a system of protected areas that is aimed at ensuring that the fauna and flora of each vegetation type is well represented;
- prohibition of hunting and collection of plant materials in protected areas, except by permit;
- establishment of a closed season on hunting;
- species of animals approved for hunting;
- approved and outlawed hunting methods
- imposition of penalties; and
- control of harmful or dangerous animals.

The enactment of the Wildlife Reserves Regulation of 1971, Legislative Instrument 710, resulted in the establishment of six (6) wildlife reserves. This has since increased to sixteen (16) as at 1991, through a number of amendments (LI 1105, 1977; LI 1283, 1983; LI 1525, 1991). Two other proposed reserves, were under consideration. The regulations prohibited hunting and collection of plant specimen from the legally constituted reserves. It also outlined basic park management guidelines (WD, 1998).

The enactment of the Wildlife Conservation Regulations 1971, LI 685, in the same year, especially covered all other wildlife resources outside the protected areas. The following were the major issues outlined in the regulations:

- restrictions on hunting and offences
- issuance of game licences;
- export permit for game and trophies; and
- other general issues

Under the restrictions on hunting certain animals are designated as wholly protected, for which their hunting, capture or destruction at any time are prohibited. Also prohibited is the hunting at any time of any animal or adult accompanied by its young. Hunters are required to obtain a hunting licence for specific species while a permit is also needed to export animals out of the country. The regulation has since been further amended by LI 1284 of 1983, LI 1357 of 1988 and LI 1452 of 1989 (WD, 1999).

1.3 *The Annual Closed Season on Hunting Policy*

As part of the restrictions on hunting, an Annual Closed Season, covering the period 1st August to 1st December of every year was imposed for which no person was allowed during the period to hunt, capture or destroy any wild animal except certain specified species.

The Annual Closed Season on Hunting was prescribed by the Wildlife Division based on the existing traditional knowledge of the reproduction of wild animals at the time. The purpose was to protect pregnant animals and those that were nursing their young during the period. It was supposed that the four-month period was long enough to enable most of the pregnant and lactating mothers, especially the large mammals, wean their young before 1st December of every year. This was to ensure that the



Fig.2 Endangered Olive Colobus Monkey

off-spring of such animals would be capable of escaping from all possible threats to their survival.

It would seem that currently, the socio-cultural, legal, biological and religious controls and management practices have broken down. For example, over the past five years, it has been observed that the bushmeat trade has continued unabated

during the Annual Closed Season on Hunting, covering the period 1st August to 1st December. Almost all species are seen displayed openly in the markets, including endangered, rare and wholly protected species. (Fig. 2) Extensive bushmeat hunting operations and market centres have emerged. Bushmeat traders and hunters associations are now in existence and are now breaking established wildlife laws and management regulations with impunity. One scarcely sees any arrest by the Police for hunting restricted animals while the courts seldom prosecute offenders even when they are arrested. There are no reliable statistical information on hunting. This compounds decision-making and awareness program to address the problem. It is for this reason that CI in collaboration with FAO has carried out studies with the view to understand the threats militating against effective biodiversity conservation, food security and the implication of the extinction of wildlife resources on the socio-cultural life of Ghanaians

2.0 THE PROJECT OBJECTIVES

The main project objectives were:

- To carry out a market survey of the bushmeat trade during the Annual Closed Season on Hunting, so as to review and advise decision-makers on the appropriateness of the existing regulations and policies;
- To establish a database on the various aspects of the bushmeat trade in Ghana
- To organise a stakeholder validation workshop on the bushmeat trade during the closed season; and
- To disseminate information on the bushmeat trade during the 2001 closed season on hunting.

3.0 PRE-FIELD SURVEY ACTIVITIES

As part of the survey programme, three activities namely, news conference, TV and Radio Talk shows were carried out.

The News Conference was held in September, 2001 to sensitize about 40 journalists about the importance of the Closed Season and the role of wild animals in contributing to forest regeneration, food security and their socio-cultural importance to the Ghanaian society. The press conference received widespread media publicity with about 6 articles published by the print media within a period of one (1) week (Appendix A). About seven (7) other radio stations, some of which broadcast in the local languages, also ran commentary highlighting the importance of the Closed Season on Hunting.

CI and Wildlife Division also featured in a popular Ghana Broadcasting Corporation (GBC) television programme called *Mmaa Nkomo*. The *Mmaa Mkomo* programme is one of the most popular television programmes that feature issues of national interest in the most widely spoken Ghanaian language, Akan. During the programme, the general public, especially the three categories of bushmeat traders: Market Queen-mothers, Retailers and Restaurant Operators and consumers were in attendance. The issues discussed were the importance of the Annual Closed Season, the impact of over-hunting, the use of unauthorised hunting methods and their implications for biodiversity conservation, food security, health and the socio-cultural fabric of the Ghanaian society. The panellist answered many questions and most of the participants made valuable contributions.

Conservation International was featured on one of the country's Radio Talk-shows, *Choice FM* Radio Station, to discuss the importance of the Annual Closed Season on Hunting. Some of the listeners who phoned in to contribute to the programme, acknowledged the fact that but for the News Conference and the Radio Programme, they were ignorant about the policies that were in

place to protect pregnant and lactating wild animals. They requested that such programmes should be run regularly to create awareness about the importance of the Closed Season.

4.0 THE MARKET SURVEY

4.1 The Results of the Markets Survey and Implications

The survey targeted major bushmeat markets in both Accra (Kantamanto, Adabraka, Agbogbloshie, Kaneshie, Madina, Makola and Mallam Atta markets) and Kumasi (Atwemonom, Central, Kwadaso, Sofoline, Asafo, Amakom, Ayigya, Bantama and Asawase markets). Questionnaires were used to collect and document information from 60 queen-mothers, 300 retailers and 200 restaurant/chop bar operators on the various aspects of the bushmeat trade. Among others, particular attention was paid to, the species being hunted and traded in during the closed season, the major sources of supply, the mode of hunting and the species that were most preferred by customers. The animals recommended for domestication were also documented. From the outcome of these measures, the appropriateness and the extent to which the Closed Season was being adhered to was assessed.

4.1.1. Species Offered for Sale on the Ghanaian Markets



Fig.3 All types of bushmeat species being sold

The survey listed forty seven (47) different species of wild animals that are sold on the Ghanaian market, with fourteen (14) of them being wholly protected in Ghana (Appendix C). The protected animals identified on the markets are Black and White Colobus Monkey (*Colobus polykomos vellerosus*) Bongo (*Tragelaphus eurycercus*), Palm Squirrel (*Epixerus ebii*) and Two-spotted Palm Civet (*Nandinia binotata*). The two

species of Pangolins are Giant and Long-tailed. The others are Bay Duiker (*Cephalophus dorsalis*) and Elephant (*Loxodonta africana*), Monitor Lizard (*Veranus niloticus*) and Honey Badger (*Mellivora capensis*).

The capture or destruction of any of these animals at all time is currently strictly prohibited by LI 685 as amended by LI 1357 of 1988 (WD, 1998). However apart from the wholly protected species, the rest could be captured or hunted after obtaining permits from the Wildlife Division. Only the Grasscutter (*Thryonomis swinderanus*) is legally permitted to be hunted and sold during the Closed Season with permit.

The survey also revealed that some totems such as the Crested Porcupine (*Hystrix sp, totem of Asantehene*) and Buffalo (*Syncerus caffer, totem of the Ekona clan of Ashanti*), are also being hunted and sold. This practice was traditionally prohibited, as totems were revered as sacred animals by many tribes and clans, particularly chiefs who use them as symbols of authority. Traditionally, it is maintained that the welfare of an individual or lineage depended on its members maintaining a relation of respect towards a particular species of animal (Ntiamoa-Baidu, 1997). As such they refrained from killing and eating such totems. It is worth noting that such traditional practices affirmed the ecological truth that human welfare is dependant on plant and animal welfare (BSP, 1993). As adherents to such beliefs advocated for the preservation of their respective totems, they prevented their indiscriminate hunting. Unfortunately, traditional wildlife management practices and control through totemism, festivals and sanctions are on the decline. The sale of all species of wild animals in the open markets is therefore a reflection of the increasing disregard for such traditional conservation norms and the breakdown of these practices.

The fact that virtually all species are subjected to over hunting implies that where the populations of key species, such as the primates and duikers, which are pollinators and seed dispersal agents,

are drastically reduced, they can no longer play their ecological functions of facilitating forest regeneration. The apparent loss of the habitat of some of these species could be attributed to this tendency. It is therefore obvious that modern conservation practices, such as the existing legislation alone cannot be effective in ensuring sustainable utilization of the wildlife resources. There is therefore the need to consider a combination of both modern and traditional practices that are sensitive to biodiversity conservation, while providing adequate levels of sustainable utilization that could also enhance food security.

4.1.2 Most Preferred Bushmeat in Ghana

It is worthy to note that of all the eleven (11) wild animals listed in terms of bushmeat preference, during the surveys, the Grasscutter (*Thryonomis swinderanus*) was the most preferred, accounting for 65.1 percent of the total preference (fig 4). This was confirmed by the fact that it was the most sought after consumed bushmeat in the restaurants and chop bars throughout the country. It is also the most abundant in all the markets surveyed. This conforms to the assertion by Ntiamoa-Baidu (1997) that it remains the most important bushmeat species throughout West Africa in terms of volume of trade and preference. It is also an indication of an over-dependence of consumers on a single species. Such over-dependence is probably resulting in the over-exploitation of this species as some of the traders had reported that much smaller sizes are now being hunted and sold, as compared to previous years. Even though the species breeds prolifically and is reported to be a destructive farm pest, the current rate of exploitation could be more than what the reproductive capacity of the populations in the wild could sustain.

The high dependence of consumers on this single species provides justification for the promotion of the Grasscutter (*Thryonomis swinderanus*) domestication programme. This is because there is currently, adequate demand for the meat of this species and any investment is most likely to readily pay off and contribute

enormously to reducing the high market demand on other wild animal species.

The preference for Grasscutter is followed by Maxwell's duiker (*Cephalophus maxwellii*) (19.9 percent) and not Royal antelope (*Neotragus pygmaeus*), as was noted by Ntiamoa-Baidu (1997). This could be attributed to the fact that the hunting pressure had impacted the populations of the latter more than the former. Caspary (2001) observed that most exploited species were those considered to cause damage to agricultural areas. Incidentally, all the eleven (11) preferred species, except the Pangolin (*Manis sp*), were farm pests *eating maize, cassava, cocoyam* among others. Altogether, they constituted more than 80% of all the bushmeat sold in the markets and the restaurants. That probably justified why they were the most exploited and sought after.

Another issue worth-noting is the fact that primates were not a favoured species for human consumption. This is because traditionally many people do not prefer primates, as a source of protein. Therefore the apparent disappearance of the primates in their natural habitats, especially the Miss Waldron's Red Colobus (*Procolobus badius waldronii*), could not be solely attributed to bushmeat consumption alone, but to other causal factors such as habitat destruction and changes in ecological conditions.

Fig 4: Most Preferred Bushmeat in Ghana



Source: Conservation International - Ghana, 2002
(Survey Period, Nov Dec 2001)

Grasscutter	GC	Maxwell Duiker	MD
Giant Rat	GR	Royal Antelope	RA
Black Duiker	BD	Buffalo	BF
Brush-tailed Porcupine	BtP	Bushbuck	BB
Fruitbat	FB	Pangolin	PG
Snails	S		

4.1.4 Sources of Supply

The results of the survey have revealed that bushmeat dealers in Ghana received their supplies from all the regions of Ghana. This indicates that all the regions are involved in the bushmeat trade even during the closed season. Bushmeat is sent to the major markets either smoked or fresh. Those using bushmeat for medicinal purposes cut the meat into various parts (bones, skull, skin, hair, tails, jaws intestines, limbs) and dry them for their clientele.

Standards for bushmeat processing and marketing vary from one area to the other. There seems to be absolutely no rules or standards for the bushmeat trade in Ghana and the quality of bushmeat offered for sale on the markets varies widely. While there may be standards set to ensure domestic meat hygiene, these either do not seem to apply to bushmeat or are totally ignored when it comes to bushmeat marketing and processing.

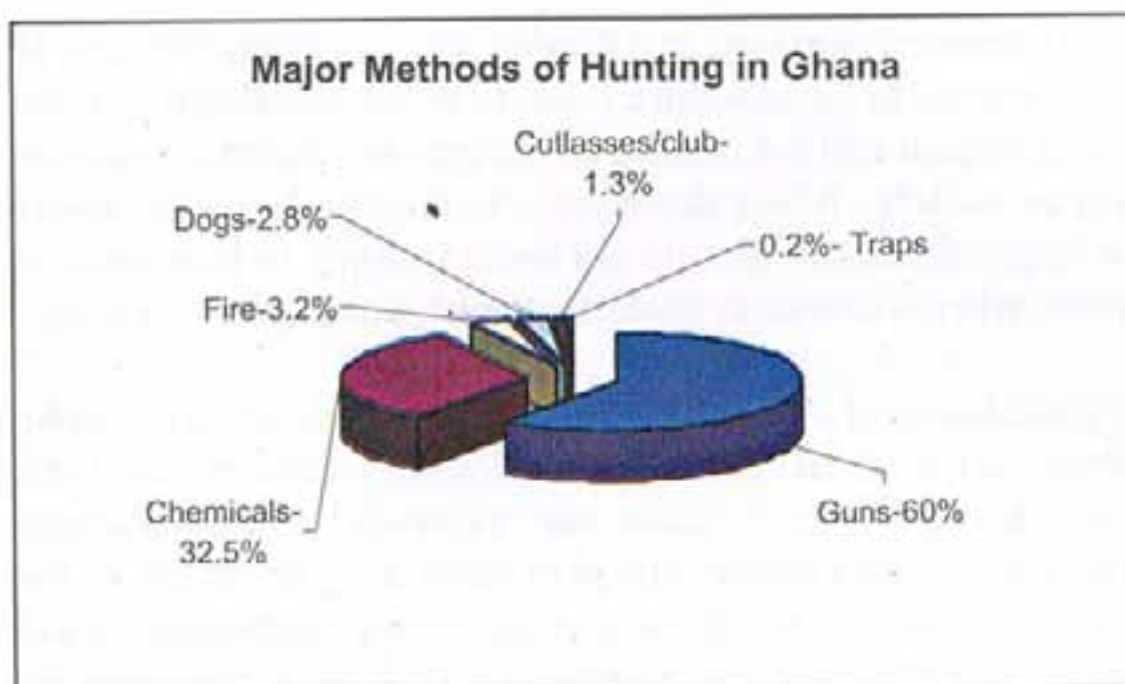
The bushmeat trade has evolved over a long period of time and developed into an intricate network of hunters, wholesalers (queen mothers, middlemen), retailers (restaurant /chop bar operators) and consumers. Hunters kill the animals and either transport them long distances to the marketing centres for sale to middlemen or the queen mothers travel to the farm gates to buy the bulk of bushmeat killed. It is common for animals killed on night hunting trips to be kept till day break before they are sold. Animals caught in traps may stay in the traps for up to three days if trappers do not visit their traps regularly for one reason or another. Sometimes such carcasses are almost beginning to decompose, but they will be collected and either sold as 'fresh' bushmeat or smoked for sale (Ntiamoah-baidu, 1997). There also seem to be no standards for smoked bushmeat and it is common to find improperly smoked bushmeat offered for sale on the markets.

The queen mothers sell the bushmeat to the retailer in the state in which they bought them. The retailers mostly restaurant/chop bar operators, process the bushmeat for sale to consumers.

4.1.5 Methods of Hunting

The survey recorded six main methods of hunting wildlife (fig 5). These methods include the use of guns (60%), chemicals (32.5%), fire (3.2%), dogs (2.8%), cutlasses/clubs (1.3%) and traps (0.2%). Of the six (6) methods of hunting recorded during the survey, only guns and traps are legally approved by LI 685 of 1971 (WD, 1999).

Fig 5: Major Methods of Hunting in Ghana



Source: Conservation International - Ghana, 2002
(Survey Period, Nov Dec 2001)

4.1.5.1 The Use of Guns

Despite all the controls on weapon possession in Ghana, the use of guns for hunting accounts for 60 percent of the bushmeat supply on the Ghanaian markets (Fig.6). The high percentage use of guns as a method of hunting as against the traditional sanctioned methods of hunting such as trapping is of critical concern to conservationists. Even more disturbing was the reported use of automatic weapons rather than shot-guns. The former promoted mass killing of wild

animals at a time, especially the gregarious ones such as the monkeys and those savanna ungulates that occur in herds.

Molade (2000) noted that most urban professional hunters use rifles and other licensed automatic weapons. Such weapons have a more devastating effect on wild animal populations as compared to the use of shot-guns. Larger species with slow reproductive rates are particularly vulnerable, and tend to disappear first where they are subjected to severe hunting pressure. Lahm (1993) also noted that within a population of about 130 people in a village in north-eastern Gabon, the ratio of gun ownership was 1:6.5. This observation could be similar to the present situation in Ghana. In the past flint-locks were used and these were made by local blacksmiths. Currently 12 gauge shot guns as well as locally made and imported rifles are commonly used (Ntiamoah-Baidu, 1997). Most professional hunters own a gun and it is common for a younger part time hunter to rent/borrow a gun from an older hunter and pay a portion of his catch for the use of the gun.



Fig.6 Hunter from the forest

This method of hunting is therefore likely to be one of the major factors largely responsible for the scarcity of the primate species in the wild and low representation in the bushmeat trade. Because mass killing could easily be effected with automatic weapons, such a method of hunting has serious implications on food security and biodiversity conservation. This is because it does not favour the sustainable exploitation of wildlife resources as an important socio-economic commodity, which supports the livelihood of both rural and urban populations.

The use of guns as the predominant method of hunting is also of great concern as it poses a threat to national security. It is a reflection of the fact that a large number of people especially in rural areas possess guns. There is therefore the likelihood that such weapons could easily be used to cause civil strife, which could result in political instability as has happened in Sierra Leone and Liberia (BSP, 2001). The displacement of human populations who tend to depend largely on natural resources, eventually leads to destruction of biodiversity. Armed conflicts tend to prevent local people from growing basic food crops for their survival and hence could result in a greater dependency on wild food such as bushmeat and wild food plants. It is therefore not only a potential threat to national security, but also to the volatile food security situation of the country.

4.1.5.2 The Use of Chemicals

One significant revelation of the survey is the widespread use of chemicals for bushmeat hunting. This method of hunting is illegal as stated in Part 1 Section 5 of the Wildlife Conservation Regulation LI 685 of 1971 (WD, 1998). This is a further indication that there is no adherence to the law.

According to the survey, the use of chemicals for hunting of wildlife constitutes about 32.5 percent of the bushmeat supplies to markets in Ghana (Fig.7). This method is particularly dangerous since it poses health hazards to consumers of bushmeat. Available records of some chemicals used for hunting bushmeat have resulted in the death of consumers. This suggests that the chemicals are harmful not only to animals but to humans as well.



Fig.7 Bushmeat appeared to have been hunted with toxic chemicals

The chemicals are of two types: Imported chemicals and Traditional preparations.

- Imported chemicals - Laboratory analysis carried out on some bushmeat sold on the Ghanaian markets by the Standard Board of Ghana has revealed the presence of organophosphates and organochlorine traces in the samples. This attests to the use of such imported toxic chemicals for hunting bushmeat in Ghana.

One of such imported toxic chemicals is referred to locally as 'sharp' because of its ability to kill large numbers of rodents that eat it. Their death occurs minutes after contact with a 'sharp' contaminated food. 'Sharp' is normally placed on a cocoyam leaf, folded and tied in anticipation that bush pigs that consume cocoyam leaves would, in addition, eat the contaminated leaves as well. The 'sharp' chemical is also used by sprinkling the chemical on the leaves of bent maize plants. Rodents that eat the contaminated maize plant die instantly in large numbers.

- Traditional preparations - Different traditional preparations are used for hunting bushmeat in Ghana. One such preparation is made by grinding the roots and bark of an indigenous tree (*Nkradadua*) and broken bottles. The ground materials are then mixed with a quantity of urine which has been kept for two weeks. This preparation is then smeared on cassava chips. A large population of wild animals, particularly rodents die after eating the contaminated cassava chips.

Another method employed is the introduction of a chemical known locally as 'Tangen' which is introduced into a semi ripe banana and the bunch hanged on a tree. Primates are particularly attracted to bananas and they die in great numbers after eating the contaminated food.

This method of hunting leaves behind a residue of harmful chemicals and this poses great threat to the environment and human health.

4.1.5.3 The Use of Fire and Dogs in Hunting

The survey revealed that the use of fire accounts for 3.2 percent of the major bushmeat hunting methods used in Ghana. The use of fire in hunting is more common in the grassland savannah areas and is mostly done in groups. Members of the group are positioned strategically around a patch of grassland known to contain wild animals. The area is set then on fire and animals are killed with cutlasses and clubs as they run out of the area to escape the fire. This method has far reaching consequences for the environment since the process results in the destruction of vegetation, soil fauna and flora and hastens in the drying of water bodies.

Hunting with dogs play a significant role in the hunting of wild animals. The bushmeat survey revealed that hunting with dogs constitutes 2.8 percent of the major methods of hunting in Ghana.

4.1.5.4 The Use of Traps and Cutlasses/Clubs

The most dominant traditionally sanctioned method of hunting is the use of traps. Others such as the use of dogs, fire and cutlasses have no legal backing (WD, 1998). Most hunters who hunt with guns also set traps. Traps may also be set by farmers who do not hunt with guns. The survey recorded a 0.2 percent in the use of traps for hunting wildlife. Traps are set in the forest in areas known to be used by wild animals or along trails and at feeding grounds. Trapping is non-selective but less destructive to wild animal populations as compared to the use of guns such as the automatic weapons. Traps end up killing all animals including those that may not be of any nutritive value to the hunter. In some Ghanaian communities snakes are not considered as food and therefore allowed to rot when captured by a trap.

Traps are also set in and around farms; often a fence is constructed around a farm and traps are set at intervals along the fence. This

system is primarily a crop protection measure and the primary objective is to reduce damage to crops by wild animals particularly rodents. This could explain the reason behind the low level of the use of this method. In addition, the irregular visit to the traps results in the decay of the bushmeat it has trapped and killed

The use of cutlasses/clubs as a hunting method is also captured by the survey. This method constitutes 1.3 percent of the major hunting methods in Ghana.

Some of these traditional resource utilization tools that are less destructive to wildlife could be modified and promoted to replace those that facilitate mass destruction.

4.2. Trade in Bushmeat during the Year

Out of 300 retailers who were interviewed, 61.4% stated that they received and sold bushmeat throughout the year. However, 38.6% indicated that they were engaged in the trade only during times of the year when they cannot find any income generating alternatives. It is therefore apparent that the former were in full-time employment while the latter only on part-time basis.

Fig 8: Trade in Bushmeat in Ghana



Source: Conservation International - Ghana, 2002
(Survey Period, Nov Dec 2001)

5.0 REVIEW OF THE 'CLOSE SEASON' POLICY

5.1 *Impact on Wild Animals Species*

The annual closed season on hunting, originated from the traditional practice of avoiding hunting during the rainy season, in order to allow wild animals to breed without hunting pressure. The Annual Closed Season on Hunting, as prescribed by the Wildlife Conservation Regulations, Legislative Instrument 685 of 1971, was thus intended to facilitate the successful breeding of wild animals and prevent their over-exploitation, by ensuring that no hunting took place during the period 1st August to 1st December. The hunting of other animals could only be allowed for justifiable reasons (WD, 1999). However, the survey has revealed that all animals regardless of the conservation status are hunted and marketed publicly.

The open display of as many as fourteen (14) wholly protected wildlife species (Appendix C) on the open market during the Annual Closed Season, indicates that the hunters and traders do not differentiate between the animals whose hunting and trade is prohibited and the ones that are allowed for hunting. Therefore if no restraint is exercised in the choice of the animals that are legally protected at all times, then there is virtually no protection for all wild animals in the country. There is therefore the need to review the wildlife laws, strengthen the enforcement and improve upon awareness campaign.

Ntiamoah-Baidu (1997) estimated that the total volume of bushmeat traded in Ghana annually is 384,000 metric tonnes worth about \$350 million. Since the Grasscutter (*Thryonomis swinderianus*) remains the most preferred bushmeat (65.1%) of the animals listed in terms of volume of trade and preference, not only in Ghana but the rest of West Africa, the species needs to be considered as a very important economic commodity. The management and utilization of the species should therefore be given more attention.

Even though the species is of such high economic importance, its contribution to the economic development of the nation is not reflected in the national accounting system. One way to cater for that and to sustain the high consumer dependence is to constitute a body such as Grasscutter Utilization Board that could be assigned responsibilities for the sustainable management, harvesting and marketing of the commodity similar to cocoa and timber.

The shift in preference from Royal Antelope to Maxwell's Duiker is a good indicator of consumers' behaviour with regards to the demand and supply of bushmeat. The latter was probably an equally good substitute that was also readily available. Domestication schemes should therefore not only focus on single species such as the Grasscutter, but on a variety of species so that the pressure of bushmeat consumption could be distributed among several and not borne by a few species. This could enable the populations of such species to thrive well in the wild.

The fact that primates are not a traditionally preferred bushmeat is worth noting by conservation practitioners. This means that the population of primates stand the best chance of recovery where traditional conservation norms are respected. There is therefore the hope that should this opportunity be pursued, the population of species such as the Miss Waldron's Red Colobus (*Procolobus Badius waldronii*) and other endangered primates could recover significantly. However, there is still the need to investigate the possible changes in other ecological factors which could be contributing to the decline of the primate populations.

The survey also revealed that some totems such as the Crested Porcupine (*Hystrix sp*) and Buffalo (*Syncerus caffer*), were also being hunted and sold. This practice was traditionally prohibited, as totems were revered as sacred animals by some members of society, especially clan members and chiefs. Traditionally, it is maintained that the welfare of an individual or lineage depended on its members maintaining a relation of respect towards a particular species of animal (Ntiamoa-Baidu, 1997). As such they refrained from killing

and eating such totems. It is worth noting that such traditional practices affirmed the ecological truth that human welfare is dependant on plant and animal welfare (BSP, 1993). It is therefore obvious that modern conservation practices, such as legislation alone cannot be effective in ensuring sustainable utilization of the wildlife resources. There is therefore the need to consider a combination of both modern and traditional practices that are sensitive to biodiversity conservation, while providing adequate levels of sustainable utilization that could also enhance food security.

5.2 The Appropriateness of the Annual Closed Season on Hunting

The idea of closed season on hunting had its origin from the traditional knowledge of the reproduction of wild animals, especially in the forest zone of Ghana. It is therefore not surprising that the current prescribed period of the Annual Closed Season on Hunting appears to favour only the large-bodied mammals of the forest zone of the country. The law is therefore of limited coverage as a few species, such as the forest ungulates were the targets. The greater part of the wild animals in Ghana, especially the ungulates, wild pigs and primates of the savanna zone were not adequately catered for by the law since most of them breed soon after the closed season. There is therefore an urgent need for a scientific review of the regulations on the existing prescribed period of the Annual Closed Season on Hunting, to ensure a wider coverage based on a combination of indigenous knowledge and modern ecologically sound practices that could promote sustainable utilization, food security and at the same time protect a greater number of the wild animal species.

Kormos and Bakarr (2001) noted that Ghana's wildlife legislation had failed to maintain an appropriate balance between use and conservation, focused mainly on hunting licenses, and protection of individual species. The existing legislation was thus considered to be more of a constraint rather than a tool for conservation. This view is particularly applicable to the current legislative instrument (Wildlife

Reserves Regulation, LI 685, 1971) on the closed season on hunting, since it is limited in species coverage, lacks enforcement and does not in any way promote biodiversity conservation. There is therefore the need for a review of such legislation to ensure that they are sensitive to biodiversity conservation and the promotion of food security.

5.3 *Bushmeat Trade as a Means of Livelihood.*

A greater number (61.4%) of all the traders interviewed, indicated that they traded in bushmeat throughout the year. This revealed that most of them depended on this trade as a full-time occupation. Their persistence in the trade during the Closed Season could be due to non-availability of suitable alternative income generating options. The volume of bushmeat available in all the markets confirmed the assertion (Molade, 2000) that despite the decline in the population of some key species in the wild, the supply to the markets remained stable. This also confirmed that there had been an increase in the hunting effort to maintain the regular supply.

On the other hand the increasing number of traders in full-time could be a contributory factor. According to some of the full-time traders who were interviewed, in their effort to stay in business throughout the year, some of them engaged and paid for the services of commercial hunters who provided them with their regular supplies. Such hunters aimed at killing the large-bodied mammals which could afford them the greatest return in monetary terms. This high level of dependence on the bushmeat trade as a regular means of livelihood could therefore easily be used to facilitate any possible wild animal domestication programme.

5.4 *Evaluation of Pre-survey Awareness Programme*

The fact that the bushmeat trade was still thriving during the period of the Annual Closed Season, attested to the fact that Wildlife Conservation Regulations, LI 685 of 1971, together with all the

amendments are not known by civil society as a whole. Despite all the efforts made by Conservation International to create awareness through the News Conference, Radio and Television programmes, very little impact was made on the bushmeat trade during the period. All the respondents indicated that they were aware that they were not supposed to trade in bushmeat, except the Grasscutter (*Thryonomis swinderanus*) during the period. However those involved in hunting perceived it as a threat to their source of livelihood. The most noteworthy impact was the reports on the consumer boycott of bushmeat, as reported by the traders themselves. This confirmed that CI's awareness campaign made a positive impact on consumers as compared to the traders. Some of the consumers, who had decided to boycott the bushmeat, were probably made aware of the dangerous health implications. Should this trend be sustained, there is the likelihood that, both the bushmeat hunters and traders may go into the domestication of some of the preferred species as an alternative option.

6.0 CONCLUSION

The persistence of the bushmeat trade during the Annual Closed Season on Hunting indicates that bushmeat still remains an important source of protein in Ghana. However the ineffectiveness of the existing regulatory mechanism has largely contributed to the escalation of the bushmeat crisis, thus posing a major threat to efforts to ensure food security and effective wildlife conservation.

While enormous efforts are being made to ensure that the exploitation of other natural resources, such as timber and mineral deposits, are effectively regulated, no such attempts have been extended to the bushmeat trade. Even though the legally recognised Annual Closed Season on hunting has been in place over more than thirty (30) years, there has been virtually no efforts at awareness creation or effective enforcement and hence virtually no adherence.

Conservation International welcomes the Closed Season on Hunting and is of the opinion that if well implemented, it has the potential to facilitate the successful breeding of a number of endangered and rare species. However, the lack of awareness and enforcement could be contributing to the bushmeat crisis, since hunting and sale of bushmeat continued during the Closed Season and could completely disrupt the recruitment and the replacement generation of a number of key species of wild animals. The lack of enforcement of such a law has serious implications on biodiversity conservation and food security in rural communities and suggests a low perception of the economic importance of this commodity on the part of decision-makers.

7.0 RECOMMENDATIONS

1. *The Annual Closed Season on Hunting is ineffective and should be reviewed and strengthened with incentives for compliance and surveillance.*
2. *The use of toxic chemicals for hunting bushmeat is very significant and must be stopped through awareness programmes and prosecution in courts in order to avoid wildlife extinction.*
3. *Awareness creation should be intensified to ensure that consumers are well-informed about the health implications of bushmeat consumption in order to promote consumer boycott.*
4. *Apart from the Grasscutter (*Thryonomis swinderanus*), which is already being domesticated, the others which were recommended for domestication, such as the Maxwell's Duiker (*Cephalohus maxwellii*), should be actively promoted.*
5. *There is the need for an ecological assessment of the appropriateness of the period for the Annual Closed Season on Hunting.*

6. *The possession of guns, especially automatic weapons in the local communities, is not only a threat to wildlife conservation but also national security. In order to reduce such threats, appropriate action should be taken to retrieve unauthorised weapons in the society.*
7. *Age old traditional conservation norms, such as sanctions and taboos that prohibit the hunting of totems and other sacred animals, need to be promoted by assisting the Traditional Authorities to enact them into bye-laws at the District Assemblies.*
8. *Community Resource Wildlife management areas should be promoted to provide sustainable protein sources for the rural communities and study tour to Zimbabwe and Sri Lanka under-study similar local initiative.*
9. *Alternative and sustainable protein sources should be identified and promoted to reduce demand on the wildlife resources.*
10. *There is also the need to train hunters in the use of safe hunting methods.*

BIBLIOGRAPHY

1. BSP (2001). The Trampled Grass. Mitigating the impacts of armed conflicts on the environment. Biodiversity Support Programme.
2. BSP (1993). African Biodiversity: Foundation for the Future. A Framework for Integration Biodiversity Conservation and Sustainable Development. Biodiversity Support Programme.
3. Caspary, H. (2001). Regional dynamics of hunting and bushmeat utilization in West Africa An Overview. IN Bakarr et al (editors). Hunting and bushmeat utilization in African Rain Forest. Conservation International, Wash. D.C.
4. Kormos, C and Bakarr, M.I. (2001). Legal and institutional mechanisms for wildlife and habitat protection in West Africa- Need for an Integrated policy assessment. . IN Bakarr et al (editors). Hunting and bushmeat utilization in African Rain Forest. Conservation International, Wash. D.C.
5. Molade, F.S.A (2000). Bushmeat consumption and trade in West Africa. Food and Agriculture Organization (FAO), Rome.
6. Ntiamoa-Baidu, Y (1997). Wildlife and Food Security. Food and Agriculture Organization (FAO), Rome.
7. WD (1998) Consolidated Wildlife Laws of Ghana, Wildlife Department.

APPENDIX A: Articles Published by the Print Media after News Conference Announcing the Closed Season on Hunting.

Date.	Name of Paper	Title of Publication
31/08/01	The Accra Mail	Chaos in the Forest
31/08/01	The Evening News	Wildlife Division is Understaffed
01/09/01	The Daily Graphic	Prosecute Group Hunters
04/09/01	The Independent	Bushmeat Hunting Banned
05/09/01	The Despatch	Observe Ban On Hunting
07/09/01	Weekend Agenda	Danger! Your Akrantie May be No More

Appendix B: Major Sources of Supply of Bushmeat in Ghana

ASHANTI	BRONG-AHAFO
Kwamang	Atebubu
Mampong	Droboso
Ejura	Yeji
Effiduase	Kintampo
Fomena	Kenyasiase
Nkawie	Droboso
Offinso	Goase
Konongo	
Abofour	UPPER WEST
Kumawu	Wa
Bekwai	
Tepa	UPPER EAST
	Navrongo
NORTHERN	Gambaga
Damongo	Bawku
Bamboi	Sandema
Salaga	
Buipe	CENTRAL
Bole	New Edubiase
	Ajumako
WESTERN	Winneba
Sefwi Bekwai	Mankesim
Bibiani	EASTERN
	Akim Abuakwa
GREATER ACCRA	Nsuta
Accra	
Shai Hills	VOLTA
Amasaman	Denu
Pokuase	Nkwanta
	Ho

Source: Conservation International, 2002

Appendix C: Species on Sale in Ghanaian Markets

Common Name	Scientific Name	Akan Name	National Status
PRIMATES			
Mona Monkey	<i>Cercopithus mona</i>	Okwakuo	PP
Black & White Colobus Monkey	<i>Colobus vellerosis</i>	Efoo	WP
RODENTS			
Grasscutter	<i>Thrynomis swinderanus</i>	Akrante	PP
Giant Forest Squirrel	<i>Proteoxerus stangeri</i>	Opro	PP
Ground Squirrel	<i>Xerus erythropus</i>	Amuokua	
Pel's Flying Squirrel	<i>Anomalurus peli</i>	Otra	PP
Giant Rat	<i>Cricetomys</i>	Okusi	PP
Brush-tailed Porcupine	<i>Atherurus africanus</i>	Apese	PP
Beecrofts Flying Squirrel	<i>Atherurus africanus</i>		PP
Palm Squirrel	<i>Epixerus ebi</i>	Opro	WP
CARNIVORES			
Two Spotted Palm Civet	<i>Nandinia binotata</i>	Abrebee	WP
Civet Cat	<i>Viverra civetta</i>	Kankani	WP
Honey badger	<i>Melivora capensis</i>		WP
UNGULATES			
Maxwell's Duiker	<i>Cephalophus maxwelli</i>	Otwe	PP
Black Duiker	<i>Cephalophus niger</i>	Oyuo	PP
Royal Antelope	<i>Neotragus pygmeus</i>	Adowa	PP
Bushbuck	<i>Tragelaphus scriptus</i>	Wansane	PP
Buffalo	<i>Synceros cafer</i>	Ekuo	PP
Bay Duiker	<i>Cephalophus dorsalis</i>	Odabuo	WP
Bongo	<i>Tragelaphus euryceros</i>	otrom	WP
Water chevrotain	<i>Hyemoschus aquaticus</i>		WP
Yellow-backed Duiker	<i>Cephalophus sylvicultor</i>		WP
SCALY ANTEATERS			
Giant Pangolin	<i>Manis gigantia</i>	Apraa	WP
Long-tailed Pangolin	<i>Manis tetradactyla</i>	Apraa	WP
Aardvark	<i>Oryctopus afer</i>	Ekuo	WP
PIGS			
Warthog	<i>Phacochoerus aethiopicus</i>	Sanka	PP
Bush Pig	<i>Potamochoerus porcus</i>	Kokote	PP
REPTILES			
Nile monitor	<i>Veranus niloticus</i>	Mampam	WP
BATS			
Fruit bat		Apae	PP

ELEPHANTIDAE			
Elephant	<i>Loxodonta Africana</i>	Osono	WP
OTHERS			
Snails	<i>Archachatina marginata</i>	Nnwa	NP
Francolin	<i>Francolinus spp</i>	Kokohwe dee	PP

