REPORT

Kribi-Ebolowa Road Project, Cameroon
Environmental and Social Impact Assessment (ESIA)

Appendix 15 - Bushmeat Study

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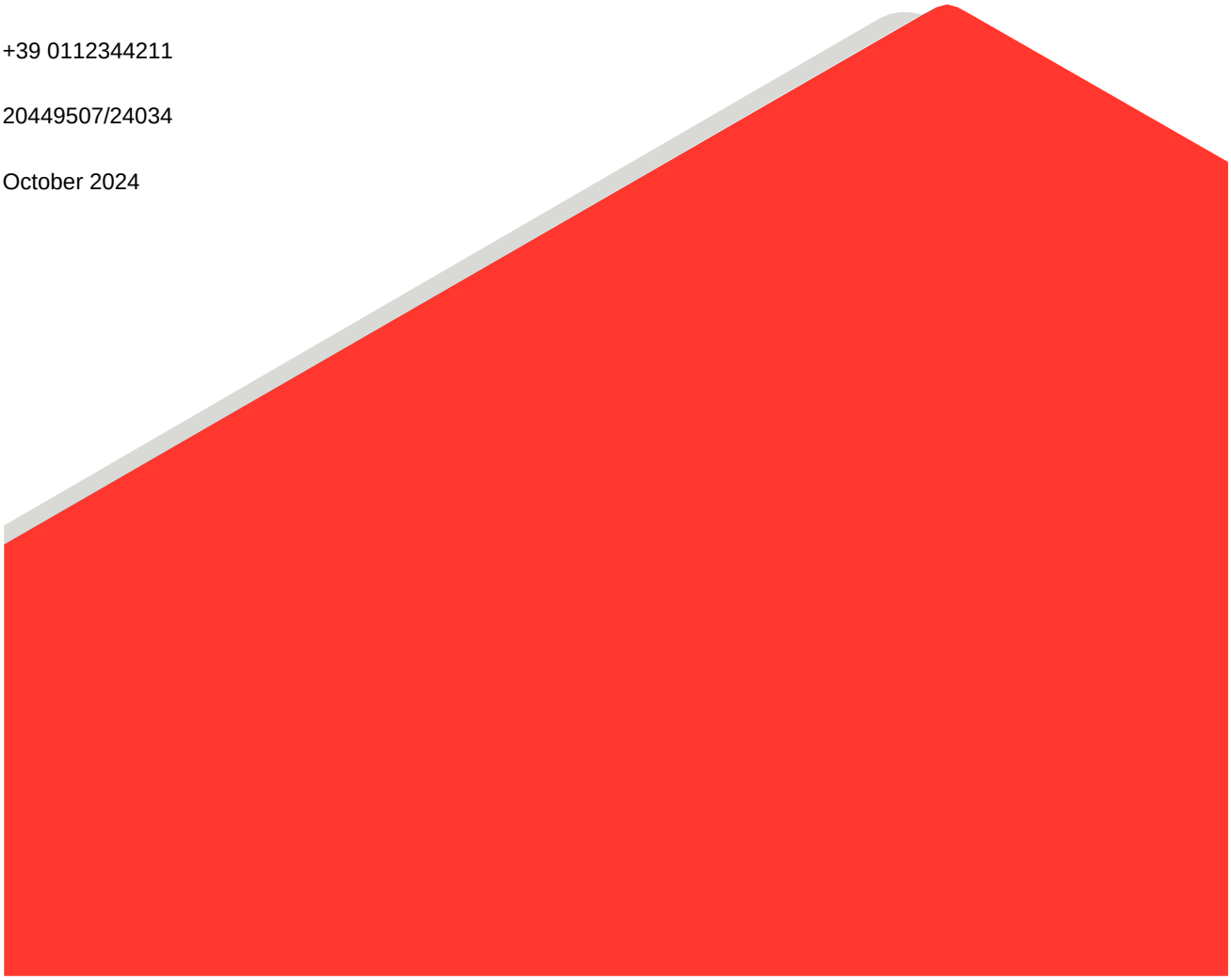

Distribution List

IUCN ARRC Task Force

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1.0 INTRODUCTION

The **Bushmeat Study** is prepared in the context of the Environmental and Social Impact Assessment (ESIA) for the upgrade of the Ebolowa - Akom II - Kribi road in Cameroon (the Project).

The baseline biodiversity data collected for the ESIA in 2022 suggested the potential occurrence of Great Apes (GAs) in the Project Area of Influence (AoI), namely the endangered central chimpanzee (*Pan troglodytes troglodytes*) and the critically endangered western lowland gorilla (*Gorilla gorilla gorilla*), which represent the *Target Species* of the ESIA biodiversity baseline study in regard to Great Apes. In alignment with the IFC PS6 Guidance Note 73, a consultation process with the IUCN/Species Survival Commission (SSC) - Primate Specialist Group (PSG) - Section on Great Apes (SGA) has commenced in February 2022 to get assistance in the determination of the occurrence of GAs in the AoI. Afterward, WSP Italia S.r.l. (WSP) shared with the IUCN/SSC PSG SGA the relevant Project ESIA sections on biodiversity. A panel of experts provided to WSP comments on supplemental field studies, actions to be carried out and suggestions for the way forward.

A significant outcome of the information collected during the ESIA baseline studies was the importance of bushmeat hunting and consumption in the area. As a consequence, IUCN/SSC PSG SGA highlighted the need to better understand the current bushmeat trade and the potential for the Project to induce in-migration in the Project AoI. WSP has addressed this issue as part of the ESIA baseline study.

This **Bushmeat Study** has been prepared through several stages ranging from bibliographical reviews with a multi-scale approach to the collection of data in the forest and within the local communities living in the Project AoI.

2.0 PROJECT OVERVIEW

The proposed Project is in the South Region of Cameroon, crossing the departments of Mvila and Ocean (Figure 1). It consists of:

- The enlargement and asphalting of existing sections of the Ebolowa - Akom II - Kribi road N17 and the construction of some greenfield sections (planimetric correction of the road axis), with a total length of 161.60 km.
- The construction of new sections connected to N17, such as a bypass in the outskirt of Ebolowa connecting N17 and N2 and a diversion in Akom II going North.
- The construction of several new bridges replacing the existing bridges along the Ebolowa - Akom II - Kribi road N17 and the construction of several box culverts replacing the existing minor drainage system of the existing road (steel pipes and RC box culverts).

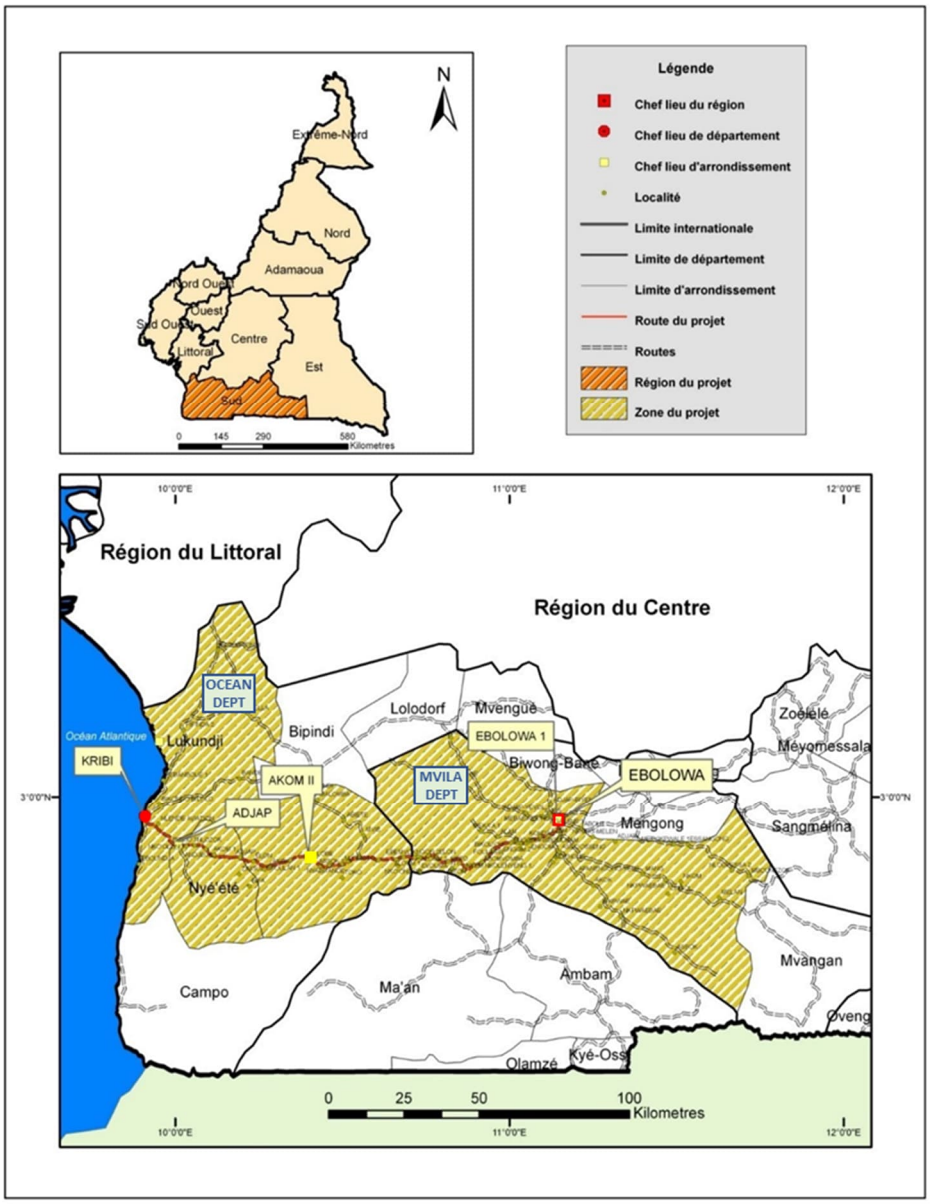

Figure 1: Location of the Project and affected Districts.

The districts directly affected by the Project are the Ebolowa 1st and Ebolowa 2nd (within the Mvila Department) and Akom II, Nieté, and Kribi 1st (within the Ocean Department). About 85% of the construction works will follow the existing N17 road, which is an unpaved (dirt track) road that connects Ebolowa to Kribi. The remaining 15% will be located outside the N17 footprint, in greenfield areas.

3.0 OBJECTIVE OF THE STUDY

The upgrade of the N17 road is expected to affect the way local people live in and use the Project AoI. An asphalted road will allow a quicker transport of products from the forest to nearby cities and vice versa, as well as an increase in population density in the villages along the road. The relationship between people and forest for bushmeat and poaching activities may be affected as well; for this, it is important to understand what the current situation is, as a basis for the assessment of potential impacts and for proposing adequate mitigation measures.

The aim of this study is to provide up-to-date data on:

- Bushmeat and poaching trade in the Project AoI; and

- bushmeat and poaching consumption in the AoI, and in the main cities nearby.

The Bushmeat study will help answer the following questions perceived as important for the ESIA:

1. *How important is the household consumption of bushmeat within local communities?*
2. *Where are the main hunting areas and which techniques are the most used?*
3. *Which species are more hunted? Is poaching present in the area?*
4. *What is the main destination of these hunted species?*
5. *Where are the main trading points? Are there poaching controls present in the area?*

We tackled the complexity of this study analysing different primary and secondary data resulting from:

- **Bibliographic information** about bushmeat and poaching at regional, national, and international level has been investigated as to understand the potential trading out of the study area.
- **Great Apes Studies-Phase I: General survey** (*method: interviews*).

  This Phase I has been carried out through interviews to 209 local people living in 20 selected villages located in the study area shown from Figure 2 to Figure 4. Interviews with hunters, farmers, and/or officials from governmental organizations provided us with useful information on hunting practices, bushmeat consumption and trade. Phase I has been carried out from the 10th until the 22nd of October 2022.

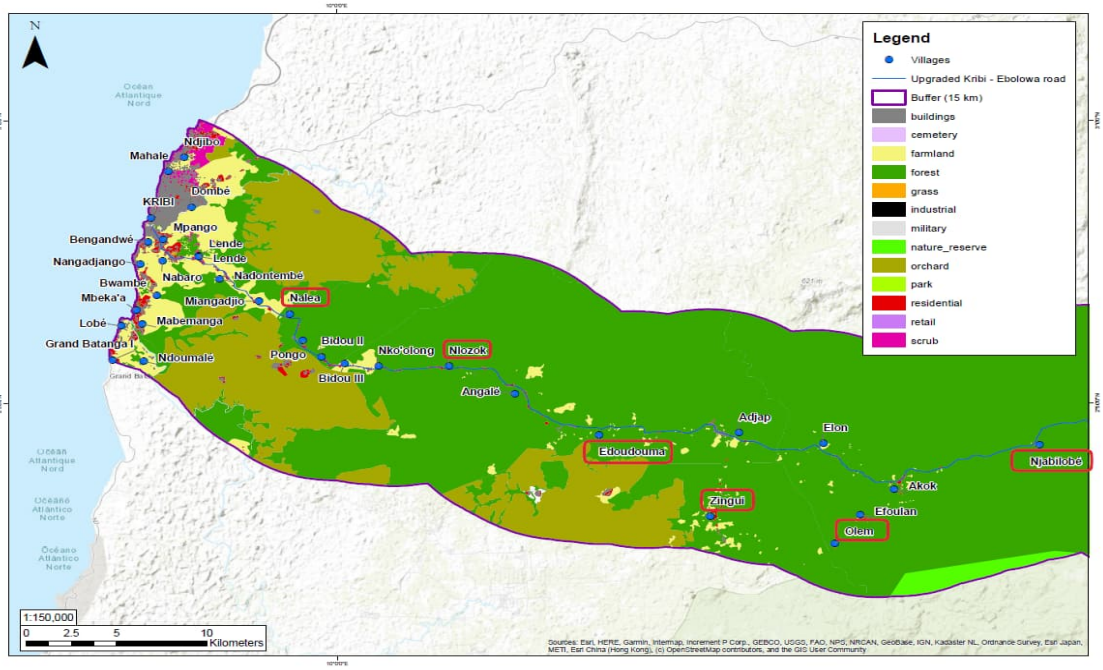

Figure 2: Study area and villages selected for interviews. Circles in red are 6 villages chosen for Phase I (1 out of 3).

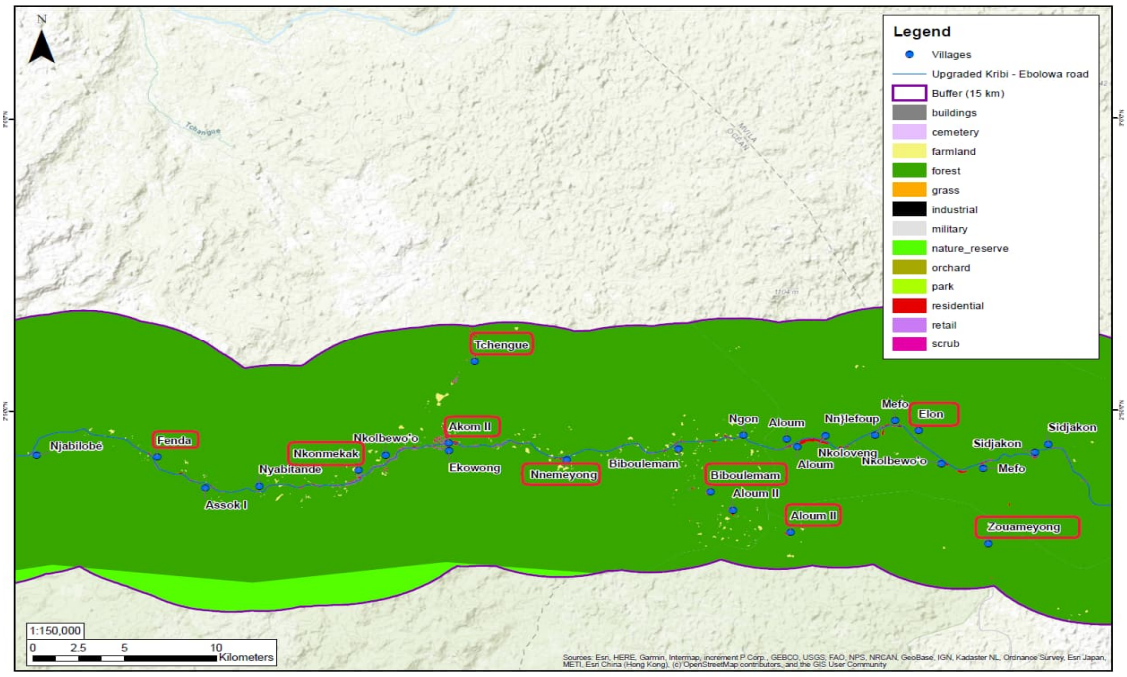

Figure 3: Study area and villages selected for interviews in red (2 out of 3).

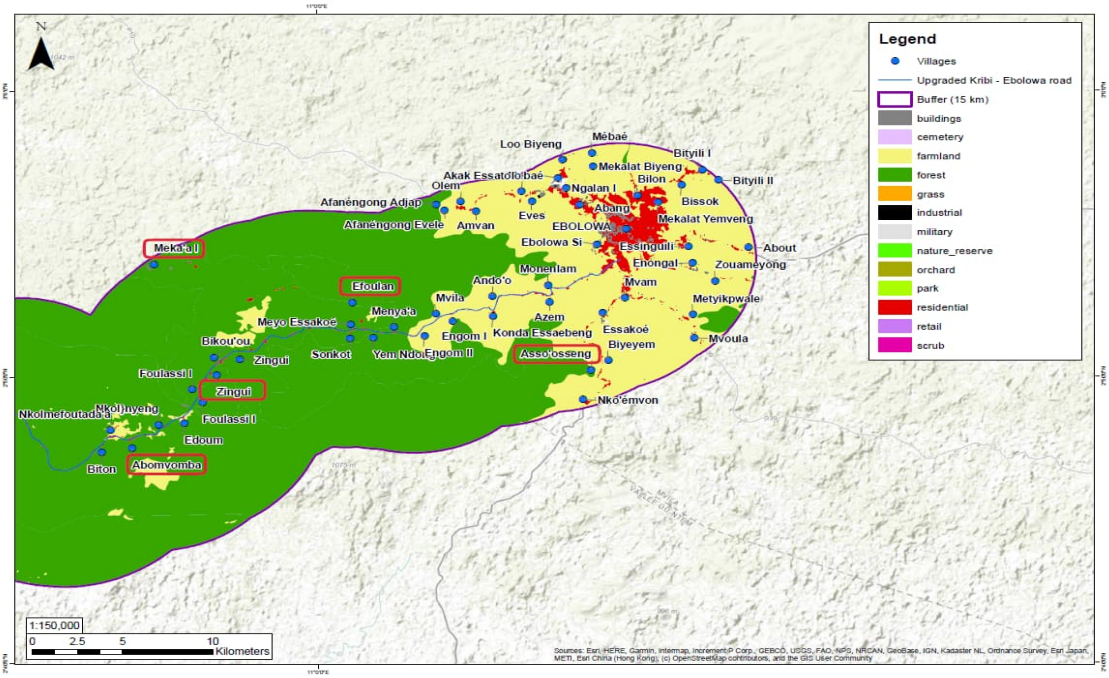

Figure 4: Study area and villages selected for interviews (3 out of 3).

- **Great Apes Studies-Phase II: Field survey** (*methods: distance sampling/recces and camera trapping).*

  We collected data on human pressure on biodiversity in the forest habitats and along the existing unpaved road (Figure 5). Phase II was carried out during the wet and the dry seasons, respectively from August 23rd to September 5th, 2023, and from February 18th to March 2nd, 2024.

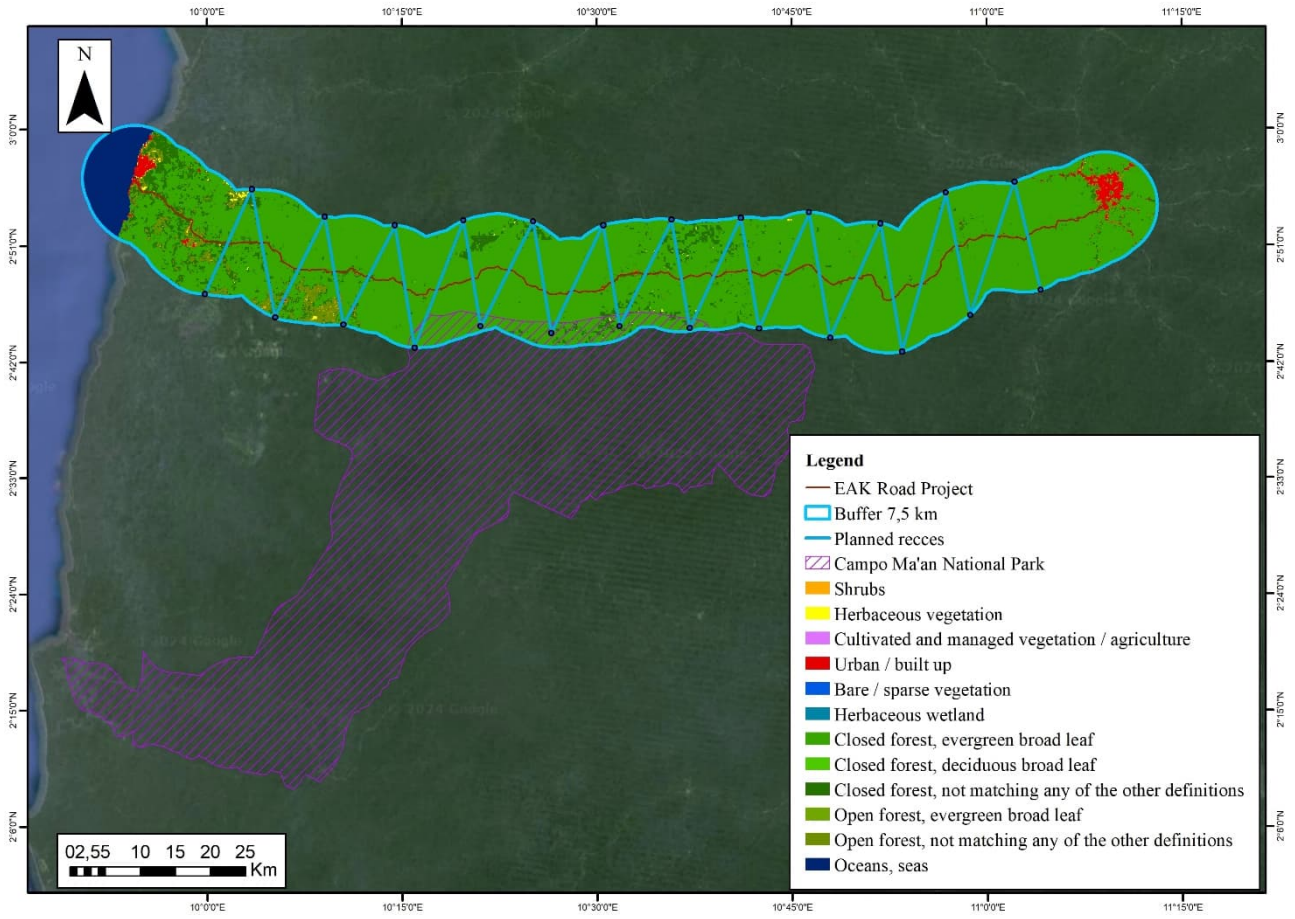

Figure 5: Study Area for the Great Apes surveys.

- **Biodiversity Field Survey** *(method: walkover transects, plot and interviews to local people)*

  Several biodiversity surveys have been carried out during the wet and dry season, in 2021, 2022 and 2023. Within each Survey Point, habitat and vegetation characteristics, fauna direct and indirect observations, main disturbances, photographic documentation, and any other information considered useful were collected. Any further relevant information, such as that from interviews to people living nearby, was also considered.

- **Stakeholder Engagement: Social survey** *(method: interviews)*.

  Lastly, during the Stakeholder Engagement activities held from March to April 2024, additional data were collected through interviews on "*Wild animal meat consumption*".

4.0 BUSHMEAT STUDY

Bushmeat is an essential and highly valued dietary protein in human population of Central and West Africa, however with the recent population growth it has been observed a "boom" in bushmeat hunting. Bushmeat hunting and consumption became unsustainable in most places, leading to local/regional extinction of hunted species and depletion of wild animal proteins available for local communities. The illegal hunting of bushmeat (named **poaching**) is a worldwide phenomenon occurring often in tropical forest ecosystems. Besides being important food, bushmeat also provides to local communities a steady source of trade income to hunter, poacher, middleman, sellers (often women) and their family.

Several socioeconomic factors and economic development, including the creation of road and rail networks, have increased human access to previously untouched areas and linked them with urban markets (Fa et al.,

2002; Willcox & Nambu, 2007). If a road is developed without appropriate and site-specific measures to address bushmeat hunting (and poaching), it could rapidly turn into a meat highway, encouraging more trade and more unsustainable use, and ultimately depletion of the forest biodiversity and forest animal protein stock.

Bushmeat studies can be very complex and can be addressed with a multi-scale approach. In this study, we have investigated the bushmeat trade and consumption in a national and regional scale through bibliographic reviews, whereas locally we carried out research on socioeconomic, cultural and conservation issue of the bushmeat consumption and trade.

4.1 National and regional bushmeat evaluation

Nowadays, wildmeat continues to be an important source of protein for 34 million poor rural and urban people in the Congo Basin and beyond; wildlife meat is also important for their role in ritual or as “symbol” for urban elite. For these reasons, besides food, bushmeat also provides a regular income to hunters (or poachers) and traders in this region (Wilkie & Carpenter, 1998; Willcox & Nambu, 2007). The increasing demand for wild meat is driving overhunting, extinction, and an increase of contracting zoonotic disease (Ordaz-Németh et al., 2017). The unsustainable bushmeat hunting will lead to the loss of an important source of dietary protein for rural poor people, a risk for the cultural identities of many indigenous people where hunting is part of their cultural heritage, and, moreover, the loss of biodiversity (Wilkie & Carpenter, 1998).

A large variety of species are sold in bushmeat markets and bushmeat trading points exist in almost every town and village throughout the Congo Basin, including in Cameroon (Fa et al., 2006, 2014). As found by a study done in Yaoundé on bushmeat markets and the main transportation routes, it has been found that bushmeat is frequently transported from the North (Adamawa), Central and South regions of Cameroon, which are areas rich in wildlife and with many National Parks and safari hunting areas (Edderai & Dame, 2006). Reliable and up-to-date data on illegal wildlife traffic in Cameroon is provided by the NGO LAGA[1], specialized in Law Enforcement in Cameroon, and focused on threatened species and poachers. As shown in the Figure 6, wildlife traffic in Cameroon occurs by road, by airplane and by boat, inside the nation and outside. The operational site of this NGO is mainly in national parks or reserve, and nearby Kribi (in the Project AoI) there are two operations’ sites.

[1] https://www.laga-enforcement.org/en

Figure 6: Overview of International Wildlife Traffic in Cameroon (source: *LAGA Second Semester Report July-December 2020*).

Several research shows that the animal species predominantly sold in local markets in Cameroon belong to the Mammalian class, some of them critically endangered or vulnerable according to the IUCN Red List like pangolins (Class Mammalia: Order Pholidota), Great Apes (Class Mammalia: Order Primates), African civets (Class Mammalia: Order Carnivora; Majiteu et al., 2024; Nkwatoh et al., 2019).

Taking inspiration from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1975, from the Convention on Biodiversity (CBD) 1992, and from the IUCN status classification, the Forestry and Wildlife Law approved in 1994 adopted a strategy of conservation classifying wildlife in 3 different categories depending on their threat status and needs for protection.

Moreover, Ministerial Order No 0648/MINFOF (Ministry of the Environment and Forest) of 18 December 2006 sets a list of species for the categories A, B and C. Species in class A are totally protected (no commercial/sports hunting permitted). In this class there are listed all the species of Annex I of the CITES classification and species classified as critically endangered, endangered, and vulnerable for the IUCN. Species in class B are partially protected and opened for sport hunting for hunting permit holders in authorized hunting areas and during hunting periods. Species from class C are the least protected and allowed for traditional and sport hunting/commercial purposes. The law not only provides regulation on hunting activities, but also on capture of wildlife, on their collection, circulation, sale, and so on.

4.2 Study area trade and consumption

To assess the current state of bushmeat trade and consumption within the Project AoI, henceforth we analyze and present several data on:

- household consumption of bushmeat.
- hunting areas and techniques.
- bushmeat species exploited.
- bushmeat destinations.
- bushmeat trade and control.

4.2.1 Household consumption of bushmeat

It is well known that bushmeat hunting provides the essential dietary protein needs for the families in Congo Basin, and clearly in Cameroon too. Bushmeat consumption has been measured in many studies. For example, some Cameroonian ethnic groups such as Mvae, Yassa and Bakola eat on average 0,02-0,20 kg/person/day, and farmers resident near Campo Ma'an Reserve consume on average 0,19 kg of meat per person/day (Koppert et al., 1993; Chardonnet, 1995; Dounias, 2016).

In our area of study, the distribution of the ethnic origin of the heads of households is predominantly Bulu (91.30%). This is because most of the villages in the study area were founded by Bulu, who settled there and passed the land generation after generation to their descendants. The remaining ethnic groups (8.70%) are represented by: Bagyeli, Bakola, Fang, Mvae and a few more.

According to data collected, most households' heads are working in agriculture, and indeed most of them claimed to be farmers and hunters. In addition, a wide variety of other activities were found to be performed such as: craft making, fisherman, teacher, tailor, bushmeat trader, and so on.

In all the villages investigated during **Phase I** (n=20) farming and hunting are both practiced, and in a smaller extent fishing too. Farming is practiced mainly by rural populations in the form of family farms (where the most common practice is slash and burn agriculture) and by some agro-industrial companies. The modern agricultural production system is essentially represented by two agro-industrial companies GMG HEVECAM and SOCAPALM. The latter breeds cattle within its fields. Family farms, and many families living along the route practice breeding to cover only subsistence needs. Hunting is widely practiced in an active way but also as to protect crops (more information on this topic can be found in the next paragraph). The practice of fishing is exclusively artisanal. It is practiced mainly by the indigenous populations along the abundant rivers of the Southern Province. The main fishing sites are located on the Lokoundje, Nyong, Kienké, Lobé and Ntem rivers (Figure 7). The main products of inland fishing are carp, crocodiles, crayfish, goujons, tilapia, and crabs.

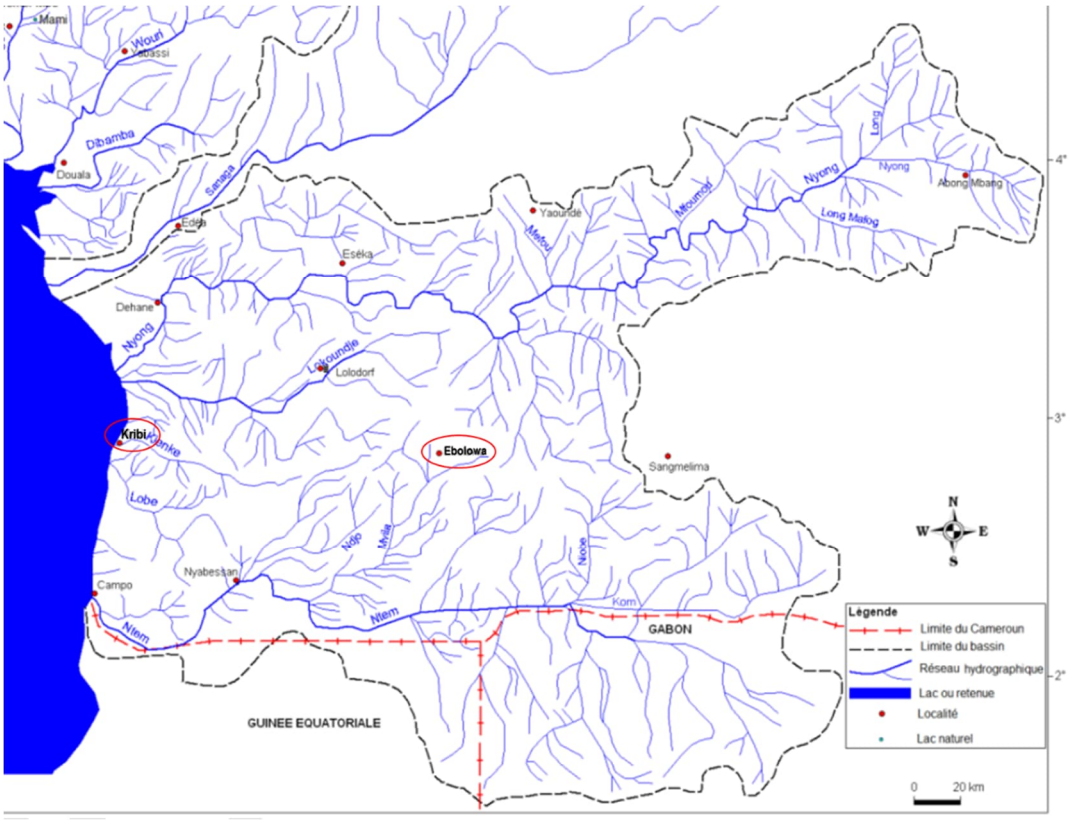

Figure 7: Rivers Basin (source: Ministry of Energy and Water, 2019).

During the Stakeholder Engagement activities carried out for the ESIA, data was collected on weekly protein intake, origin source of these proteins (gathered from the forest, hunted, or bought at the market), and food preference (or availability) in the study area.

On average, the people interviewed consume 2 - 3 days per week proteins from nuts (peanuts, pistachios, etcetera), wild animals, and fish. Eggs, legumes, shrimps (or insects) are eaten between 1-2 days per week, meanwhile chicken, pork, and snails between 0.5-1 day per week. Occasionally and rarely, people report some special meals with sheep, goat, and other red meat. The last three meals are very often associated with big events or celebrations, such as weddings or funerals.

Nuts, beans, snails, fish, shrimps (or insects) and wild animals come always from the forest (or in case of some nuts from harvesting activities). Chicken (and eggs), pork, goat, sheep, and other red meat are coming from breeding and purchased almost all the times in the market (69%), or not purchased but given as a gift, and this happens with less frequency (31%). Wild meat is purchased in the market for the 82% of the times.

Foods that are mainly consumed dry or smoked are nuts, fish, shrimps (or insects) and wild animals. Chicken (and eggs), pork, snails, sheep, goat, and other red meat are mostly consumed fresh.

When it was asked about food preference and favorite dishes, most answers confirmed a higher choice for wildmeat and fish. Nuts were also mentioned many times, because typical Cameroonian dishes are often with a base of pistachio or peanuts (Figure 8). Wild meat preference is shown in the pie chart Figure 9. A more detailed discussion on species eaten and exploited from the forest is presented in the following paragraphs.

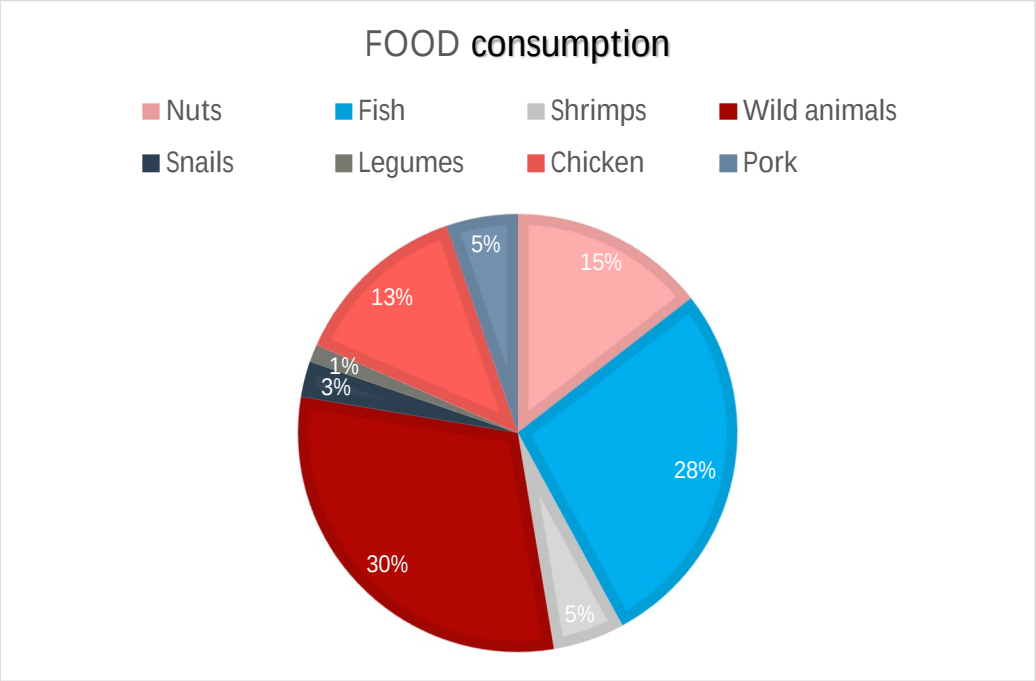

Figure 8: Food and dishes consumed within our study area.

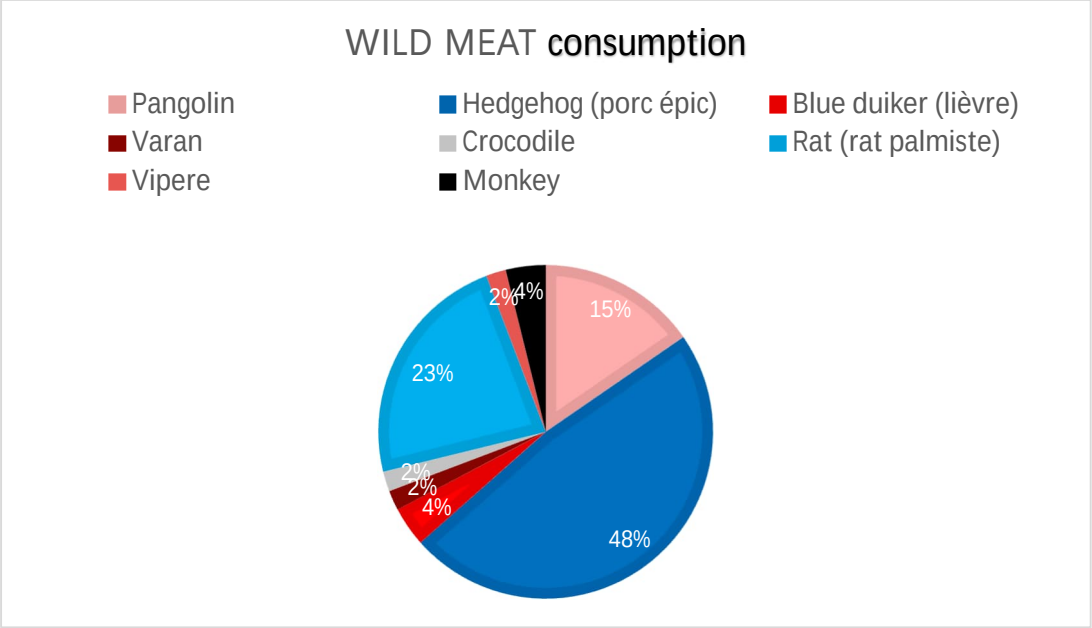

Figure 9: Wild meat consumed within our study area.

4.2.2 Hunting areas and techniques

Based on **Phase I** interviews to 209 local people from the 20 villages (see maps in Section 3.0), 95% of them use the forest for agriculture while 75% for hunting. Only those who declared to be a hunter were asked other questions regarding hunting techniques (157 hunters). These villagers employ snares 47% of the time, 16% shotguns, 11%-night jacklighting, 10% of the time they hunt with dogs and a few use machetes and hunting spear. 84% of them go to the forest for hunting during the morning or in daytime, while a 16% of them hunt at night and spend several nights in the forest in their hunting camps.

During **Phase II**, data on human hunting activities have been collected in the Project AoI. As an example, hunting signs (*e.g.:* snares, cartridge case, gunshot heard, and hunting camp) have been spotted and recorded. Snares

and trap lines (reported from local people to be used mainly for crop protection) have been recorded during the wet and the dry season and are shown in the map in Figure 10. Snares are one of the hunting signs most widely distributed and found in the whole AoI. Most of the snares found are mainly made with metal cables, a dangerous tool for large wildlife (from Figure 11 to Figure 13).

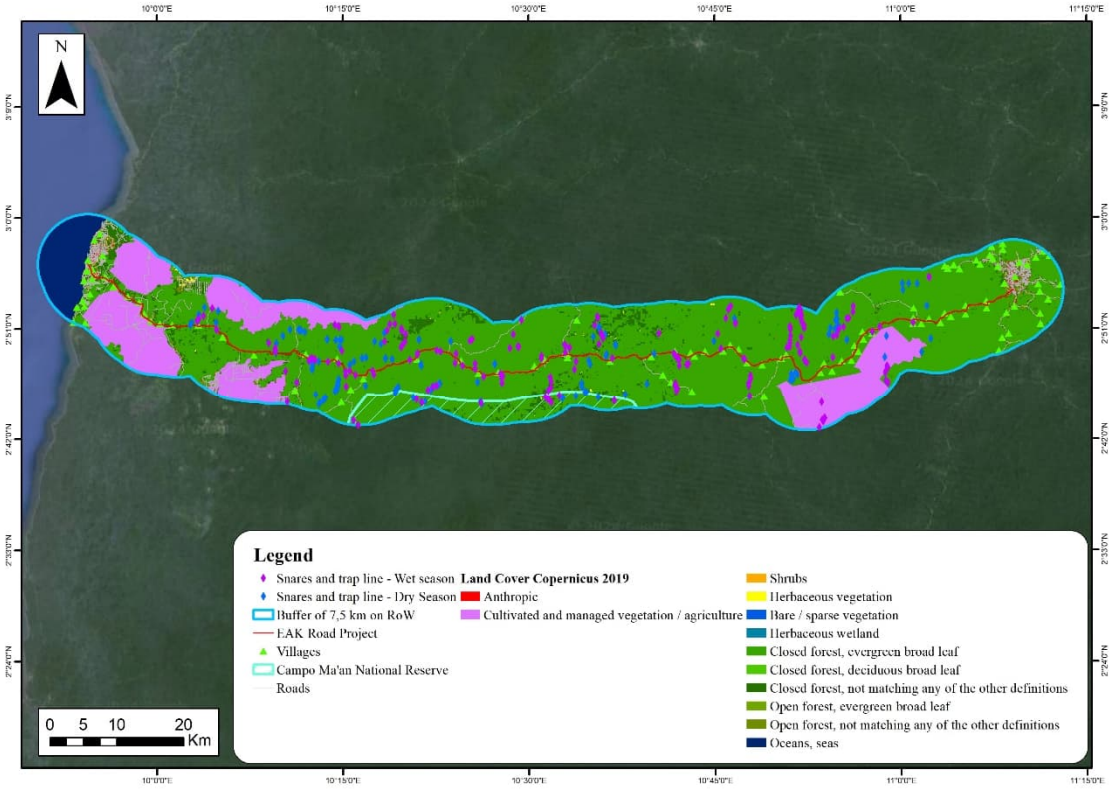

Figure 10: Snares (single or trapline) recorded during the wet and dry season in 2023-2024.

Figure 11: Signs of human hunting acitivities: trap lines.

Figure 12: Signs of human hunting activities: single active snare.

Figure 13: Signs of human hunting activities: wildlife trapped in the single snare.

Signs of other human hunting activities have been recorded such as empty cartridge cases, gunshots heard, and hunting camp sites (represented in the map in Figure 14 and Figure 15).

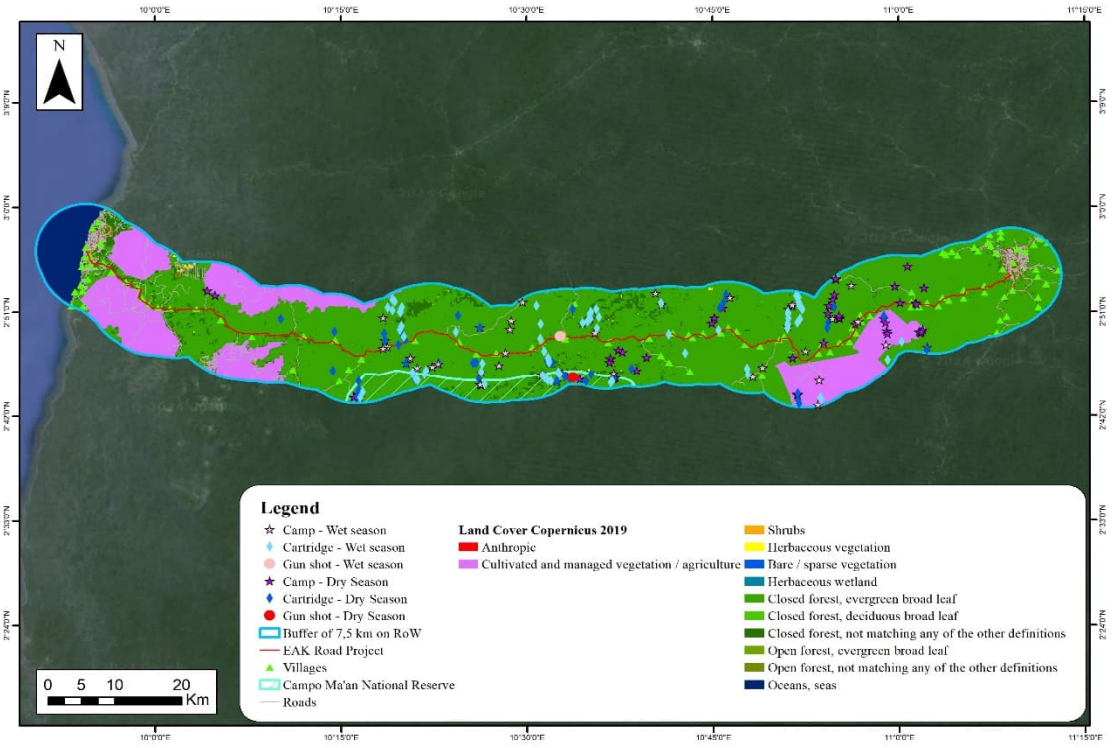

Figure 14: Hunting camps, empty cartridge and heard gunshot recorded during the wet and dry season in 2023-2024.

Figure 15: Signs of human hunting activities: empty cartridge (on the left) and hunting camps (on the right).

The different hunting signs were observed to be widely distributed over the entire study area. These activities tend to spread from the several routes present in the Project AoI and to slightly decrease near the southern part of the survey area (where there is the border of the Campo Ma'an National Park).

4.2.3 Species exploited

When it was asked which kind of species where the most hunted in the forest, hunters answered this question in different ways. A species-specific identification was not possible for all the answers, for this reason we grouped the dataset in larger species groups (precisely in the order taxonomic rank), and in the histogram in Figure 16 we show the frequency (number of times the answer has been recorded during the interviews) of

hunted species. The Order Rodentia (rodents) is the most reported hunted groups species, followed by the Order Artiodactyla (ungulates like the sitatunga Figure 17 or duikers Figure 18) and Squamata (lizards and snakes). Almost with same values of frequency we found the Order Pholidota (in this case, pangolins species as in Figure 20) and the Order Primates (no Great Apes, but monkeys like in Figure 19). And lastly, we found the Order Primates (Great Apes), Order Testudines (turtles), Order Carnivora (such as civet) and lastly the Order Crocodylia (crocodiles).

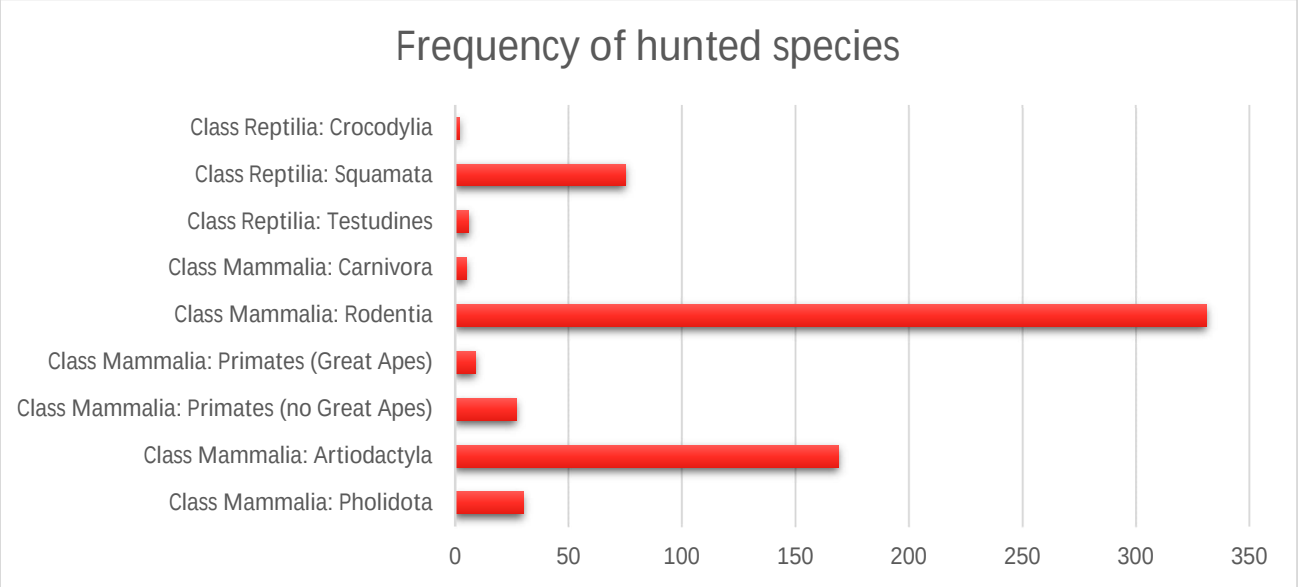

Figure 16: Frequency of species (sorted by Order) most hunted in the forest (as resulting from Phase I interviews).

Figure 17: Long spiral-horn of adult male (on the left) and a young individual (on the right) of sitatunga (*Tragelaphus spekii*).

Figure 18: Individual of bay duiker (*Cephalophus dorsalis*) on the left and on the right meat from the blue duiker (*Philantomba monticola*).

Figure 19: Two individuals of moustached monkey (*Cercopithecus cephus*).

Figure 20: Scales of white-bellied pangolin on the left (*Phataginus tricuspis*) and caudal scales of black-bellied pangolin on the right (*Phataginus tetradactyla*).

Some identified species, such as the pangolins, are species listed in class A according to Cameroon wildlife law or B such as the tortoise, or C such as the blue duiker.

Hunters also reported chimpanzees and gorillas (Figure 21) as hunted species, respectively 4 and 2 times, belonging to class A and therefore totally protected (no commercial/sports hunting permitted).

Indeed, our investigations revealed that only two over 20 villages have a taboo against hunting Great Apes, since in Zingui (Zaire) village gorillas are *totem* animals (but not chimpanzees) and in Fenda village (see maps in Section 3.0) both chimpanzees and gorillas are not hunted. In addition, when we asked if GAs were protected by local customs or rites, 171 interviewees out of 206 (83%) replied with a negative answer, meanwhile 35 (17%) said "*yes*". This information is also supported by the data gathered from the interviews, where it was asked to whom has seen during his life a Great Apes (GA) dead where, when, and why the GAs was killed. Most claimed to have seen a dead GAs in the villages (68%), and 28% of them in the forest. A 2% of the interviewed declared to have seen a dead GAs killed by a non-local person, and very few declared to have seen it in Ebolowa or in a market. Most of these observations were made within the last 5 years or more (80%), however there is a 13% of the interviewed that declared to have seen a dead GAs within the last year, and a 3,5% within the last month and within the last week. Lastly, when asked what the cause of this killings is, the 74% of the interviewed replied it is for food, 3% responded because they were crop-raiding, a 5% for self-defense and an 18% of interviewed didn't know the cause (Table 1).

Figure 21: Gorilla teeth, according to hunters.

Table 1: Why was the GAs killed.

Traditional medicine	Food*	To sell babies	Crop-raiding	Truck/car	Afraid/self-defence	I don't know
0%	74%	0%	3%	0%	5%	18%

*Of the 69 people that had reported for food reasons, 12 have specified "*to sell in the village*" and 1 "*to sell in Kribi*".

4.2.4 Destination of the hunted species

The interviews made at 209 local people of the 20 villages revealed that the 55% of the bushmeat is eaten in the household, a 23% is sold out in the same village meanwhile a 6% is sold in other villages (such as Akom 2 or in Ebolowa) and on the road (Figure 23). A 10% of the interviewed declared to give the bushmeat as a gift to some other household (Figure 22).

The same trend and percentage have been found also during the Stakeholder Engagement interviews.

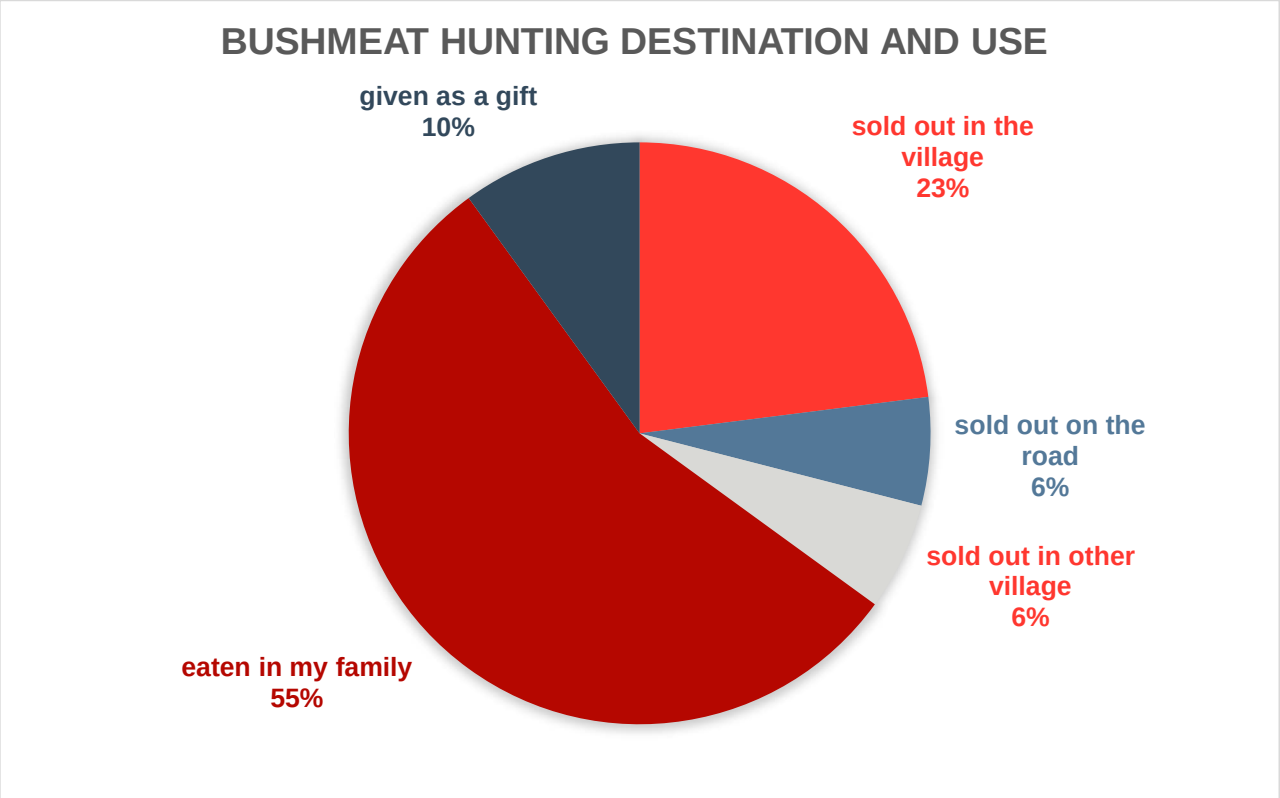

Figure 22: Data on bushmeat destination and use, from the interviews of the Phase I.

Figure 23: Example of bushmeat being sold on the Project road.

Information regarding local markets along the Project were collected during Phase I:

- Akom II. Sold goods are mostly grocery, rice and legumes, chicken, pork, and fish, traditional and modern medicine, cloths etc. It was also found bushmeat (not Primates) coming from Nnemeyong. At the moment of the visit, there was on sell an entire turtle, weighting about 2,0kg, still alive for the price of 3000 CFA. Mostly of the items are transported to the market with moto or carrier (by foot), one or two times per week.

- The market in Nkonmekak village is abandoned.

4.2.5 Trading control

From a study done by Ntungfor & Atanga, in 2017 it has been found that "*the criminal process of detection, prosecution and punishment of wildlife crimes is not very effective and therefore fails to adequately deter wildlife offenders and potential wildlife offenders*". The cause of this very low efficiency comes from limited human, financial and material resources; irregularities in the trial and sentencing of wildlife crimes; limited will in combating wildlife crime because of ignorance and the very low status of wildlife crime in the Cameroonian society (Ntungfor & Atanga, 2017).

To understand how much knowledge on wildlife laws and the state of protection we asked, "Are GAs protected by Cameroonian law?"; 188 out of 208 (90%) interviewees replied with "*yes*", 2 (1%) with no and 17 interviewees (9%) replied with "*I don't know*". Multiple answers were given when we asked where they learned this information, and most people reported it as information channel through journal, radio, television, or learnt at school or through village meetings and the local chief. Moreover, the majority of the interviewees (127 of 211) told us about awareness campaign through NGO, "Eaux et forêts", Eco-guards, WWF leaflet, MIMFOF, UFA and Parc National de Campo Ma'an.

In the Project AoI, there are in Akom 2 offices of both the MINFOF and the Eco-guards (sub-division Akom 2) of Campo Ma'an National Park (Figure 24). During Phase II, data on controlling points along the Project RoW were collected, and out of 17 controlling points 8 were in use and manned by a police officer (Figure 25). The remaining 9 were sometimes with local people or a simple bar.

Figure 24: Ministry's official showing a bushmeat seized during the Phase I.

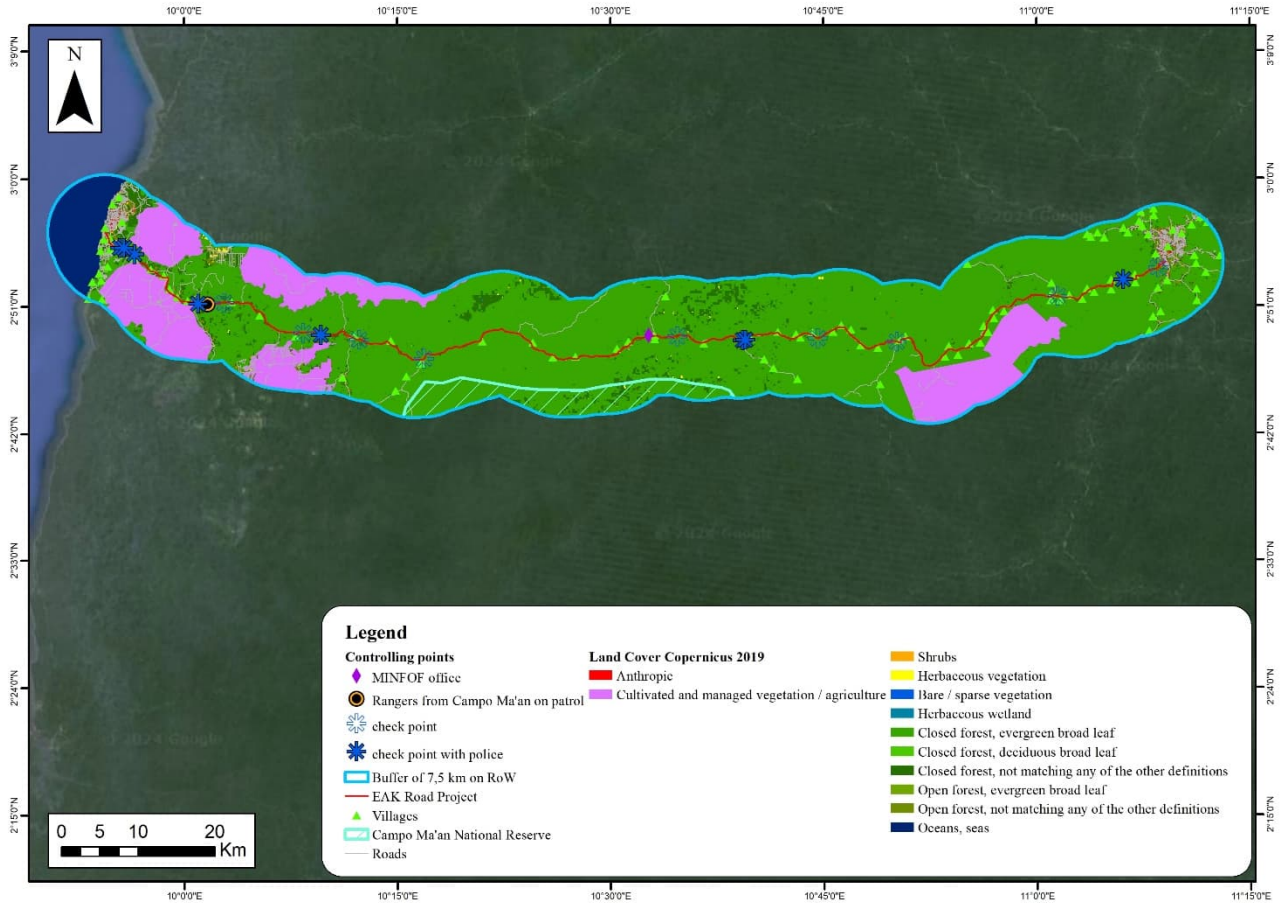

Figure 25: Controlling points recorded during the wet and dry seasons in 2023-2024.

5.0 RESULTS AND RECCOMENDATIONS

The following conclusions can be drawn as a result of the study:

- According to the data collected, most households' heads are working in agriculture, and indeed most of them claim to be farmers and/or hunters (respectively 95% and 75%). Hunting techniques reported in our study area are singular snares or trap lines (47%), shotguns (16%), night jacklighting (11%) and hunting with dogs (10%). Hunting with singular snares, or with the use of guns, dogs or night jacklighting can be considered as an active hunting technique. As observed in the forest, many farmers use the trap lines technique around their field as an opportunistic way of hunting. Most of the snares found are mainly made with metal cables, which constitute a danger for large wildlife.
- Within the Project AoI, household consumption is mainly of fish and bushmeat. On an average, local people consume weekly between 2-3 days proteins from nuts (peanuts, pistachios, etcetera), wild animals, and fish. Eggs, legumes, shrimps (or insects) are eaten between 1-2 days per week, while chicken, pork, and snails between 0.5-1 day per week. These results indicate that bushmeat consumption has a high importance and relevance within the local communities, and moreover is an important source of protein.
- When only hunters were interviewed, the results show that 55% of hunted bushmeat is eaten in the family, 23% is sold out in the same village and 6% in other villages (such as Akom 2 or in Ebolowa) and on the road. 10% of the interviewed declared to give the bushmeat as a gift to some other family. When the interviewees were not only hunters, but they also declared to purchase wildmeat in the markets 82% of the times.

- Nuts, beans, snails, fish, shrimps (or insects) and wild animals come always from the nearby forest. Hunting areas and human pressure are widely distributed over the entire study area. The values obtained from the analysis show that at the northern border of the Campo Ma'an National Park hunting pressure is slightly decreasing, however it is still present.
- The rodents are the most reported hunted species, followed by ungulates (mostly of small size such as blue duikers), lizard and snakes. The results from the composition of hunted and consumed species suggest that in the area biodiversity is changing and is mostly being hunted out. Indeed, as shown from Eves and Ruggiero, 2000, rodents become an important prey only in disturbed areas.
- Species protected by Cameroon wildlife law such as pangolins and tortoise are also hunted. Illegal wildlife consumption is widely present in our study area, and local communities do not discriminate between legal or illegal wildmeat. Hunters also reported chimpanzees and gorillas as hunted species, respectively 4 and 2 times; these are class A species, and specifically totally protected (no commercial/sports hunting permitted).

The results of the bushmeat study suggest the following measures:

- There are site-specific recommendations which could be applicable to the Project and adopted as mitigation measures in the ESIA. These could be implemented in the biodiversity Environmental and Social Management Plans (ESMP) which must be approved by the contractor (ICM) and the operator (MINTP) of the Project. These are:
    a. **Zero tolerance** for GAs hunting, as well as for any other protected species hunting.
    b. Support the controls along the road during construction (check points) and in the surrounding forest areas.
    c. **Incrementing Eco guards in the section of Akom.**
    d. **Raising awareness** on the need to protect wildlife and their forest biodiversity (e.g. publicity of cases of arrest and wildlife law offenders, include signals on the road of protected species presence and hunting prohibitions and fines).
- There are other site-specific recommendations that go beyond the ESIA temporal scope and could be implemented as part of an Offset Strategy, even though their feasibility must be discussed with appropriate stakeholders and approved by the appropriate Cameroonian government authorities, including the Project operator (MINTP). The stakeholders considered important for this kind of discussion are: MINFOF, MINEPDED, Campo Ma'an National Park direction and its Eco-guards, local communities within the Project AoI, Cameroonian NGO's and IUCN. These recommendations are:
    a. **Raising awareness** on the need to protect wildlife and their forest biodiversity **and promotion of alternative (cheap and sustainable)** animal source of protein such as fisheries and/or livestock farms to decrease the pressure in biodiversity due to bushmeat hunting.
    b. **Support the national reserve** with a buffer zone of protection in the northern limit of Campo Ma'an.
    c. **Incrementing Eco guards' capacity in the section of Akom**, through increasing resources, trainings, and equipment of front-line.
    d. **Long-term monitoring** through bushmeat studies (e.g. with dietary habits questionnaires) of biodiversity changes in the forest.

- At last, despite the local communities seem to be aware of wildlife laws and state of protected species, effective control seems to be very limited in combatting wildlife crime; these are recommendations for law enforcement by the Govern authorities:

  a. **Supporting control systems** (LAGA, check points, police). MINFOF officer to remain on-site for cracking down on the illegal trade in bushmeat.
  b. **Poaching price manipulation** through fines and taxation.

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