

Assessing the Population and Enhancing the Capacity of Peripheral Communities in the Conservation of Pangolin (*Manis spp*) in the Kimbi-Fungom National Park, Cameroon

Brief Background

The Kimbi-Fungom National Park is located between 6.5-6.9° N and 9.8-10.5° E in the Northwest Region of Cameroon covering a total land surface of 95,380 ha. This national park is located in three divisions of the Northwest Region of Cameroon cutting across four sub-divisions. These divisions are Menchum, Boyo and Dongo Mantung and found in the respective sub-divisions of Fungom and Fru Awa, Misaje and Bum. This park was created under Prime Ministerial decree number 2015/0024/PM of 3 February 2015 with a total surface area of 95,380 ha. This park is a consortium of two old reserves that were created on 2 May 1936 as the Fungom Native Administration Forest Reserve (Forestry Ordinance, 42 of 1936) and 1964 as Kimbi Wildlife Sanctuary. These two reserves existed with respective sizes of 327.25 km² and 51.4 km². The northern area of the park runs along the Cameroon-Nigeria borders while the eastern, southern and western parts of the park are within Cameroon territory stretching to the Nigerian border at the Gayama Basin. These vegetation types are the low land rainforest, gallery forest, woody savanna and grassland savanna. Some good research have been carried out in the park but with very little about the most threatened pangolin.

This project was designed to improve on the knowledge of local communities in and around the Kimbi Fungom National Park on pangolin conservation. Specifically, this project sets out to assess the present population of pangolin in the Kimbi Fungom National Park for effective protection. Secondly, carry out sensitisation in 10 peripheral communities on the role and benefit of pangolin conservation. Thirdly, to enhance the capacity of 10 eco-guards (forest guards) and 10 community field guides in the use of field equipment and species survey and also in monitoring hunting activities such as snaring and effective patrol in the park and fourthly, survey market pattern and supply chain of pangolins. This will help policy makers and park managers in effective formulation of planning and conservation policies that will help protect the surviving pangolin population.

Project progress: January 2021 to August 2021

This is a period where most of the field work was designed to be implemented. Within this period, the entire research team together with those to be used in the field developed the required plan and came up with an outstanding project implementation plan. Survey plans and maps were produced, data collection sheets were designed, questionnaires were designed, training guides and manuals were produced, and the sensitisation banners were produced. Field equipment which was to aid for training such as camera traps, GPS and compass were presented to the conservator of the Kimbi Fungom National Park, Mr. Ashu Walters. During this period too, there was great search on existing literature on pangolin related research especially in savanna ecosystems, its trades and related problems. This desktop search increases the knowledge of the research team and better their skills to deliver the best especially during sensitisation and training.

Survey of Pangolin Population

The project made use of both biological and socio-economic survey methods. For biological survey, the park was divided into 15 blocks. This was to avoid bias in data collection on pangolins, habitat use (preference) and human activities. The "Line transects technique was employed. In the study area a total of 30 3 km line transects

was randomly laid with the use of the GIS software. With the help of the GPS, the transect end points were located from our position. These points were trailed using the compass by following the orientation of the angle given by the GPS. Where necessary, was used to trim impeding portion of the vegetation along transects to ensure easy access and identification of pangolin or their signs. Data recorded included number of pangolins or signs, habitat characteristics, activity, habitat type, weather condition, time of day and season. Human signs were also be recorded and included farms (active and abandoned), settlements, snares, gun shells, gun sounds, hunting camps, hyrax snares, human paths, hunting camps, dogs and actual sightings of hunters. The survey started in February to July 2021.

Results obtained from the field detected 43 signs of pangolins along transects, recce and opportunistically, six live pangolins through recce walk and 15 live pangolins opportunistically in the savanna ecosystem. We also detected 14 pangolin snares in the forest. Other species and signs detected were the critically threatened Nigeria Cameroon chimpanzee, olive baboons, velvet monkeys, mona monkeys, putty nosed monkeys, patas monkey, bay duikers, blue duikers, antelopes, cane rat, African civet, African wild cat, the monitor lizards. These species were detected in both ecosystems, lowland forests, gallery forests, woody savanna, grassland savanna and swampy ecosystem. A greater proportion of rodents were detected in the savanna



Pangolin feeding sign close to the nest in the lowland forest of Etchem



Left: Black bellied Pangolin detected opportunistically. Right: White bellied pangolin detected in hunters hurt.

Bush Meat Market Surveys

The bushmeat survey was done for a period of 6 months in the different communities from January to June 2021. This socio-economic survey was designed to assess the bushmeat markets, supply chain and quantity of pangolin and other wildlife harvested per season. Competent field assistants and community guides were purposefully selected and trained on the collection of socio-economic data pertaining to bushmeat harvest and trade. This was done during the sensitisation meetings in the 10 communities. A questionnaire and interview guide were designed. The questionnaire was designed in two parts; part one captured bushmeat markets, routes and supply chain while part two captured the quantity of bushmeat harvested in the area per season. We selected one hunter from each village to lead the research team based on their popularity and position held in the hunting circle. Datasheets were distributed to them and were collected every month. This was in a bid to obtain reliable data on harvest in the different villages.

From the data collected, all species of animal in the park are harvested and sold for economic purpose with little part of the species consumed locally. We recorded 92 pangolins both smoked and fresh. Highly harvested species included cane rat, blue duiker, bay duikers, porcupine, African civet, wild cat, antelope, baboons, white nose monkeys, mona monkey, patas monkey, rock hyrax, ground giant squirrels and mongoose, pythons and monitor lizards. Some of the species detected in the market such as the wild cats are not found in the database of the Kimbi-Fungom National Park. This means that a lot is still to be done as far as biodiversity study is concerned in the park. Most often, hunters notified research team on hunting expeditions. Most of the catches were assessed directly from the source (hunters hurt). It was confirmed that about 75% of the bush meat harvested are sold to Nigerians the access River Katsina Ala.



Smoked bush meat for sale at Etchem



Left: Fresh bush meat at Munkep. Right: Bushmeat displayed for sale at Subuum

Sensitisation

A total of 10 communities were sensitised in and around the park. The sensitisation was done in different areas including palaces, community working days (village clean up days) and market squares depending on the advice of the chiefs. Our team members alongside trained community field guides played key roles in the sensitisation campaign. They took part in community cleaned up in some peripheral

communities just to make sure that the messages went through to the people. Two banners were produced carrying images of two pangolins taken from the field, a pangolin trap detected along a transect and a termite mound detected in the savanna part of the park. This sensitisation was focused on the importance of pangolins conservation. Snaring, hunting of pangolins and bush fire were the main threats that were re-echoed during the sensitisation campaign.

After a series of question-and-answer sessions, the communities expressed their willingness to limit the harvesting of pangolins and other threatened species in the park. But their worries were focused on the fact that there is no control of bush fires in the park as bush fires remain the greatest threats to pangolin conservation owing to the fact that grazers set fire to regenerate grass which intend encroached into the park and cause maximum damage to pangolins. According to them, about 50% of pangolins harvested opportunistically every dry season results from the effect of bush fire. A total of 721 people attended the sensitisation workshops. The distribution was as follows: Esu main settlement (314 persons), Menkep (40), Gayama (45), Kpep (31), Mudzey (42), Etchem (93), Tengheukah (64) Mbwi-Mbwi (34), Munkaa (27) and, Subuum (31). Besides other members of the communities, we made sure that a greater proportion of hunters be present during the sensitisation. We also extended our sensitisation to some Muslim notables around the park. They were very optimistic and reaffirmed that they are better ambassador to conservation since they do not eat bush meat.



Family Photo in Etchem



Left: Family Photo in Esu. Right: Family photo at Munkep

Training of Forest Guards and Community Field Guides

Training of eco-guards and community field guides was done in two sessions. The first part was the theory in which power point presentations were made on camera trapping, GPS, compass, and data entering and SMART in law enforcement and patrols. Three camera traps were used for demonstration. This was focused on setting up the camera, parts of the camera, how to insert the SD Cards, how to position a camera in the forest, the height of the camera on the tree and the spacing of camera traps. The use of GPS, compass and binoculars were also a main focus of the training. Well designed data sheets were distributed to all the eco-guards and community guides for sample data collection in the field.

After the theory in which it was understood that the trainees were well equipped with the knowledge gathered, we then went to the forest for practical sessions. The practical phase was focused on movement along transects, data collection including physical detection of species, signs (dung, footprints, track, nests, vocalisation, feeding signs and all human activities). This training took a total of 10 days especially for community members. The local population advised that it was very important to include more community field guides for the training since eco-guards suffer from government transfers.

Due to the Anglophone crisis that affects government uniform men, eco-guards were trained at the Limbe Botanical Garden. This advice came from the conservator Mr Walters Ashu. We contacted the conservator of the garden who gave us the permission. Community guides were trained in the park.



Theoretical Training of the Eco guards at the Limbe Botanical Garden



Left: Field Training of Community guides. Right: Field training of Eco guards