Final report

Title: Enhance conservation efforts for amphibians (endemic) on the Mount Tchabal Mbabo a key biodiversity area in Cameroon.

At the end of this project, in which we have endeavoured to provide comprehensive and complementary information on the impact of human activities on the distribution and behaviour of amphibian fauna on the whole of Mount Tchabal Mbabo; we have obtained some promising results.

Based on information from the social science survey and the preliminary study, we have selected 6 villages (3 new) to sample: Sambolabo, Mayo Kelele, Mayo Dardawal, Fungoi, Mayo Waldekai and Mayo Selbe.

Identification and Localization of matrix categories (forest, grassland, wetland, and riparian), and each transect where standardized methods (Visual and acoustic scanning of microhabitats) were applied.

After obtained all the research permits, we carried out fieldwork to detect species abundance, richness and demography in sites that were not previously surveyed and additional sites that species are likely to occur as identified from the social science survey. The methods used were Opportunistic encounter survey and acoustic device.

We characterized frogs' habitat (canopy coverage, stem diameter at breast height, and vegetation density) following the methodology used by (Hillers et al., 2008) and 45x20m rectangular plots randomly selected.

So far, among the different villages we sampled during the dry season (October 2023 to March 2024), our sampling efforts have led us to have one of our flagship species *Cardioglossa alsco* in the Mayo Selbe village despite the ongoing threats on the different habitats of frogs around the Tchabal Mbabo mountain.

Following is the report of all the frogs we found during this project.

1. Sambolabo village:

Here, habitat type was mostly grassy savannah. With the help of the team (figure 1), we have documented 10 different species of frogs from 5 different genera.



Figure 1: Research team collecting the data near the Sambolabo village during the night survey: from the right to the left, we have the field guide, the field assistant, I (principal investigator) and the porter.

Site 1: Mayo Doube river

Here, we had 20 specimens of *Sclerophrys regularis;* 27 specimens of *Sclerophris maculata;* 4 specimens of *Hyperolius balfouri;* 8 specimens of *Ptychadena oxyrhynchus;* 10 specimens of *Afrixalus aff. fulvovittatus* and 3 specimens of *Ptychadena mascarenensis.*



Figure 2: A=Sclerophrys regularis; B= Sclerophrys maculata; C= Afrixalus aff. fulvovittatus; D = Ptychadena oxyrhynchus; E= Hyperolius balfouri; F= Ptychadena mascarenensis.

Site 2: Sarbo gari river

We found 27 individuals of *Afrixalus aff. fulvovittatus*, 18 specimens of *Sclerophrys regularis*, 7 specimens of *Sclerophrys maculata*; 5 specimens of *Xenopus cf amieti* and 8 individuals of *Ptychadena oxyrhynchus*.



Figure 3 : Xenopus cf amieti.

Site 3 : Goumti river

We found 2 individuals of *Ptychadena mascarenensis*; 3 specimens of *Sclerophrys regularis*; 5 specimens of *Xenopus eysoole*; 14 specimens of *Xenopus sp* and 7 specimens of *Hoplobatrachus sp* in this site.



Figure 4: A= Xenopus eysoole; B= Xenopus sp.

Mayo Kelele village

Habitat type in Mayo Kelele was mostly gallery forest. Here we had 10 different species from 5 different genera.

Site 1: Mayo Matelela

The survey of this site enabled us to have 9 individuals of *Phrynobatracus sp*; 17 specimens of *Hyperolius riggenbachi*; 2 specimens of *Hyperolius nordequatorialis*; 34 specimens of *Hyperolius nitidulus*; 8 specimens of *Xenopus eysoole*; 4 specimens of *Arthrolepsis sp1* and 2 specimens of *Ptychadena oxyrhynchus*.



Figure 5: A= Phrynobatracus sp; B= Hyperolius riggenbachi; C= Leptopelis nordequatorialis; D=Arthrolepsis sp1.

Site 2: Mayo Moussa

In this site, we found 4 individuals of *Afrixalus cf. vittiger*; 19 specimens of *Hyperolius igbettensis*; 11 specimens of *Hyperolius nitidulus*; 5 specimens of *Phrynobatracus sp* and 8 specimens of *Xenopus sp*



Figure 6 : A= *Afrixalus cf. vittiger* ; B= *Hyperolius igbettensis.*

Site 3: Mayo Alim

Here we found 23 specimens of Ptychadena oxyrhynchus and 9 specimens of Phrynobatracus sp.

Mayo Dardawal village

Here we had 7 different species from 5 different genera. Habitat type was mostly constituted of gallery forest.



Figure 7: Ntene Soh Branly installing the acoustic monitoring device near the water body during the survey around Mayo Dardawal village

Site 1: Mayo Oula

Here, we had 40 species of *Ptychadena oxyrhynchus*; 15 specimens of *Xenopus sp.*; 5 species of *Sclerophris regularis* and 58 specimens of *Xenopus eysoole*; 7 specimens of *Hyperolius nitidulus*.

Site 2: Mayo Corboual

In this site, we had 5 specimens of *Xenopus sp*; 42 specimens of *Hyperolius nitidulus* and 13 specimens of *Ptychadena oxyrhynchus*.

Site 3: Mayo Laidegardal

We had 4 individuals of *Xenopus sp*; 25 individuals of *Astylosternus sp*; 15specimens of *Xenopus eysoole*; 20specimens of *Hyperolius nitidulus* and 19 specimens of *Hyperolius riggenbachi*.

Fungoi village

In this village, habitat type was essentially the forest gallery (figure 8). We had 4 different species from the same genera.



Figure 8: Landscape of the habitat structure harbouring the water body we sampled in Fungoi village



Figure 9: Principal investigator sampling for the morning survey on the site in Fungoi village.

Site 1: Mayo Sardoua

In this site, we have found a total of 4 species of *Astylosternus*: 15 specimens of *Astylosternus rheophilus*; 9 specimens of *Astylosternus sp1*; 6 specimens of *Astylosternus sp2*; 20 specimens of *Astylosternus sp3*.





Figure 10: A= Astylosternus cf. rheophilus; B= Astylosternus sp1; C= Astylosternus sp2; D= Astylosternus sp3;

Mayo Waldekai village

Habitat type in this village was mostly gallery forest. In this village, we had a total of 8 different species from 4 different genera.



Figure 11: Landscape of the gallery forest harbouring the water body we sampled in the Mayo Waldekai village.



Figure 12: Principal Investigator using the net for catching some frogs and tadpoles.

Site 1: Mayo Fungoi

Here we had 5 individuals of Arthroleptis sp2.; 6 tadpoles of Astylosternus sp1; 4 specimens of Arthroleptis sp3; 5 specimens of Hyperolius riggenbachi and 21 specimens of Hyperolius nitidulus.





Figure 13: A = Arthroleptis sp2; B = tadpoles of Astylosternus sp1.; C= Arthroleptis sp3

Site 2: Mayo Waldekai

In this site, we had 24 individuals of *Xenopus cf eysoole*; 4 specimens of *Arthrolepsis sp4*; 3 specimens of *Hyperolius riggenbachi*; 40 specimens of *Hyperolius nitidulus*.



Figure 14: Arthrolepsis sp4

Site 3: Mayo Waourou

Here, we had 9 specimens of *Xenopus eysoole* 18 specimens of *Hyperolius nitidulus*, 6 specimens of *Arthrolepsis sp5*, 4 specimens of *Hyperolius cf riggenbachi*.



Figure 15: Arthrolepsis sp5

Mayo Selbe village

Habitat type in this village was mostly gallery forest. Here we had 12 different species from 4 different genera.



Figure 16: Landscape of the gallery forest harbouring the water body we sampled in the Mayo Selbe village

Site 1: Mayo Selbe

Here, we had 15 specimens of Astylosternus sp1; 3 specimens of Cardioglossa alsco; 8 specimens of Astylosternus sp2; 7 specimens of Phrynobatracus sp; 3 specimens of Arthroleptis sp2; 13 specimens of Arthroleptis cf. palava; 5 specimens of Arthroleptis cf. variabilis; 6 specimens of Arthroleptis sp6.; 3 specimens of Arthroleptis sp7 45 specimens of Hyperolius nitidulus; 7 specimens of Hyperolius cf riggenbachi and 7 specimens of Astylosternus rheophilus.





Figure 17: A = Astylosternus sp1; B = Cardioglossa alsco; C = Astylosternus sp2; D = Phrynobatracus sp; E = Arthroleptis sp2; F = Arthroleptis cf. palava; G = Arthroleptis cf. variabilis; H = Arthroleptis sp6; I = Arthroleptis sp7.

Collection of swabs:

During this project, we performed swabs of over 80 frogs. For now, we are not yet able to say if there is the presence/absence of chytrid fungus on the mountain because we had a slight delay in the analyses, due to the fact that the samples could not be exported at the scheduled time.



Figure 18: Principal investigator taking swabs parameters of a frog

Record coordinates of breeding sites of endemic species

During our field survey, we found breeding sites for endemic frog species at all the sites. Around Fungoi village, we had breeding site of *Astylosternus sp. (figure 19 A*); in Mayo Kelele village we had one breeding site of *Ptychadena oxyrhynchus (figure 19 B*).



Figure 19: A= Breeding site of *Astylosternus sp* at the Mayo Sardoua River B=Breeding site of *Ptychadena oxyrhynchus* at the Mayo Moussa River.

Threats:

The two main threats here were animal raising (Figure 20 A) and bushfires (Figure 20 B) although we also noted the pollution of waterways by local people through the use of chemicals such as soap, detergent etc... On figure 20 A around Fungoi village, the watercourses that are home to the frogs are the sources from which the cattle come to drink.



Figure 20: A= Animal raising documented around Fungoi village; B= Bushfire documented around Mayo Selbe village.

Communication and Engagement:

We conducted interview sessions with farmers, shepherds, and other components of the community (figure 21 A) through the distribution and collection of questionnaires. Conservation education programmes in the surrounding communities in schools were also carried out (figure 21 B).

We also continued our awareness-raising programmes in local media, local gatherings, and dissemination of conservation news on our social media platforms (Facebook (https://web.facebook.com/ntenesoh.branly/), Tweeter (X))



Figure 21: A= My assistant and I during the interview sessions with locals in Mayo Selbe village and B= Students and I during Conservation education in school around Mayo Kelele village.