



INTRODUCTION

- Fish is the world's largest source of animal protein (FAO, 2000).
- Fish make up more than half of terrestrial vertebrates (Eshmeyer *et al*, 2010)
- The aim of this work is to make a contribution to the knowledge of the diets of Alestidae

MATERIAL AND METHODS

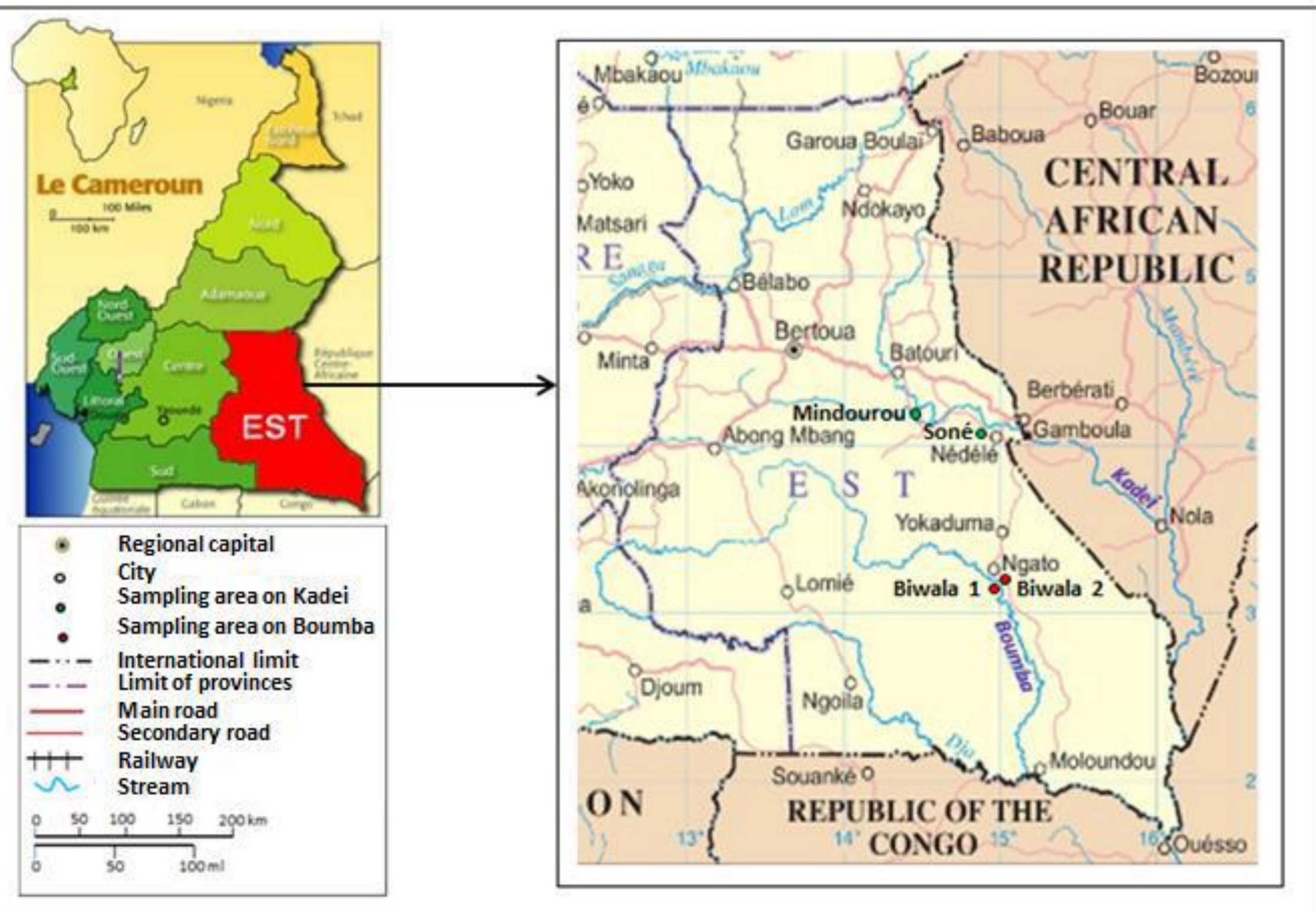


Fig1. Map of the study area showing the Boumba and the Kadei rivers and sampling points

- ❖ Biwala 1 (03° 13. 306' N and 014° 54. 158' E);
- ❖ Biwala 2 (03° 13. 205' N and 014° 55. 281' E)
- ❖ Soné (04° 05. 940' N and 014° 55. 001' E);
- ❖ Mindourou (04° 08. 074' N and 014° 34. 208' E)

This study was carried out between December 2018 to May 2019 in two rivers: Boumba and Kadei

Fish were captured using dormant gillnets, hawk, hook and trap

Fish were identified, photographed, measured (total and standard lengths), weighed and dissected in order to collect their stomachs which were stored in tubes containing 70% alcohol



Fig 2. Hydrocynus vittatus

- ❖ These stomachs were then emptied and the contents rinsed in Petri dishes, then filtered through a sieve and the retained fractions were sorted, separated, identified, counted and weighed
- ❖ The stomach contents of these fish were analyzed using Corrected frequency of Occurrence (Fc), the weight percentage (P) , the preponderance index (Ip) and the Horn's dietary overlap index.

RESULTS AND DISCUSSION

A total of 106 stomachs were collected from six species of Alestidae including 63 in Boumba and 43 in Kadei river.

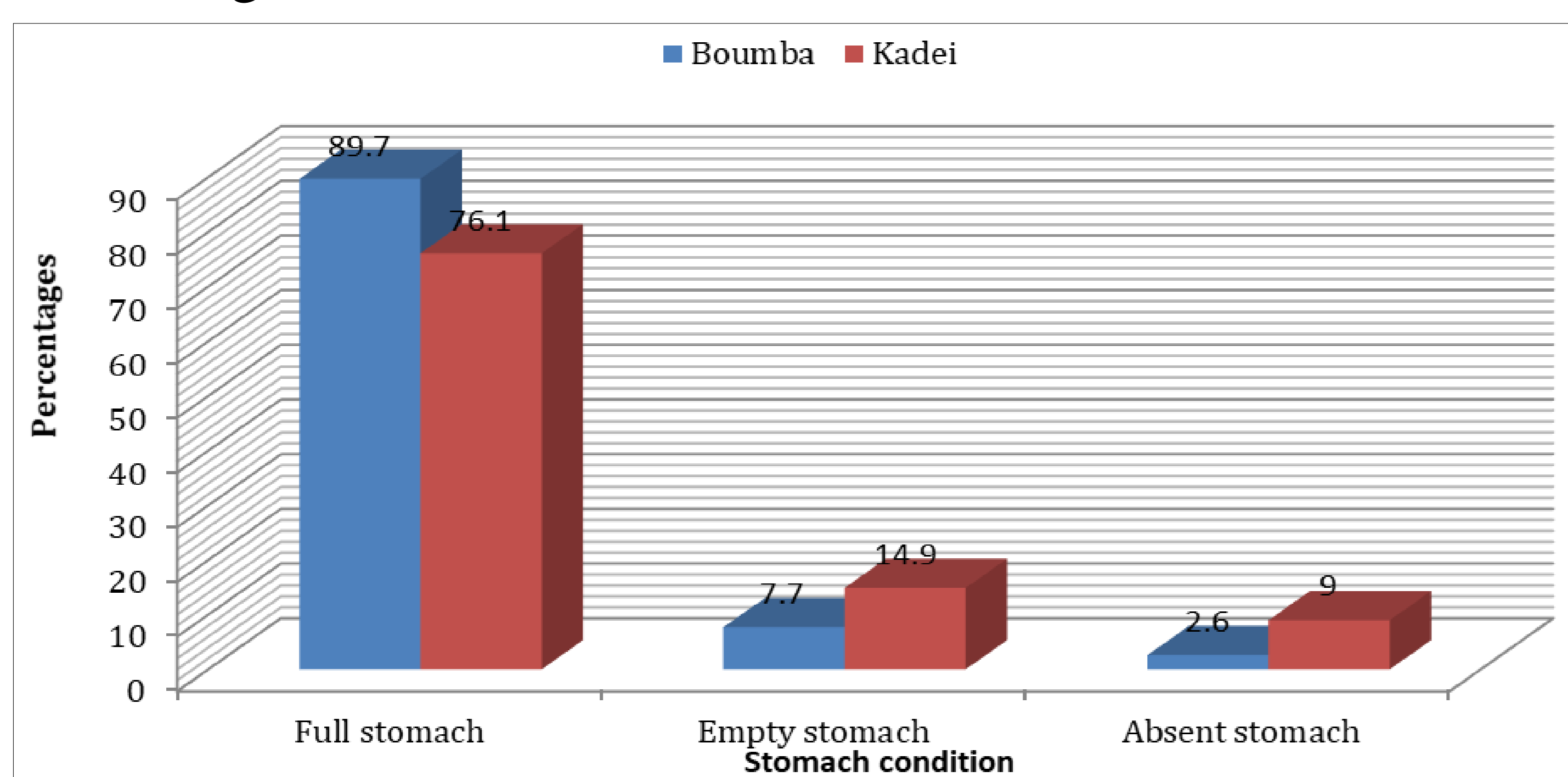


Fig 3: State of the stomachs of fish according to the sampling sites.

Table 2: coefficient of emptiness in the different species of the two rivers

Species	Boumba	Kadei
	Vacuity coefficient	Vacuity coefficient
<i>Alestes macrophthalmus</i>	8,33	50
<i>Bryconaethiops spp</i>	33,3	/
<i>Brycinus longipinnis</i>	0	/
<i>Brycinus macrolepidotus</i>	0	8.69
<i>Brycinus imberi</i>	/	25
<i>Hydrocynus vittatus</i>	100	60

Qualitative analysis

- ❖ Four food categories have been identified in the fish stomach :
 - Macroinvertebrates;
 - macrophytes;
 - prey fish
 - other miscellaneous particles

Quantitative analysis

- ❖ Lepidoptera are very frequent (Fc = 100%) and main (Ip = 100%) preys, in the diet of *Brycinus longipinnis* in the Boumba, while at Kadei it is rather the Orthoptera (Fc = 100%; Ip = 100%), and prey fish (Fc = 100%; Ip = 100%), respectively in *Alestes macrophthalmus* and *Hydrocynus vittatus*.
- ❖ However, the vast majority of prey consumed by the different species of fish in the Boumba and in the Kadei seems to be accidental (Fc <20%) and / or accessory (Ip <10) prey, with the exception of Hymenoptera which are fairly frequent (40 ≤ Fc ≤ 59%) and main (Ip > 50) preys in the diet of *Brycinus macrolepidotus* in Kadei.

Overlap of diet between in different species

- ❖ In Boumba there is an overlap in diet between *A. macrophthalmus* and *Alestes sp.* ; *A. macrophthalmus*, and *B. macrolepidotus* and between *Alestes sp.* and *B. macrolepidotus*. On the other hand at Kadei there is an overlap of diet only between *A. macrophthalmus* and *B. imberi*

Table 3: Index of dietary overlap between different species.

Sites	Comparison Species /species	Overlap index (Cλ)	Observations	overlap in diet
Boumba	<i>A. macrophthalmus</i> / <i>Bryconaethiops sp.</i>	0.999	Cλ > 0.6	Yes
	<i>A. macrophthalmus</i> / <i>B. longipinnis</i>	0.046	0 < Cλ < 0.6	No
	<i>A. macrophthalmus</i> / <i>B. macrolepidotus</i>	0.804	Cλ > 0.6	Yes
	<i>A. macrophthalmus</i> / <i>H. vittatus</i>	0	0 < Cλ < 0.6	No
	<i>Bryconaethiops sp.</i> / <i>B. longipinnis</i>	0.018	0 < Cλ < 0.6	No
	<i>Bryconaethiops sp.</i> / <i>B. macrolepidotus</i>	0.797	Cλ > 0.6	Yes
	<i>Bryconaethiops sp.</i> / <i>H. vittatus</i>	0	0 < Cλ < 0.6	No
	<i>B. longipinnis</i> / <i>B. macrolepidotus</i>	0.083	0 < Cλ < 0.6	No
	<i>B. longipinnis</i> / <i>H. vittatus</i>	0	0 < Cλ < 0.6	No
	<i>B. macrolepidotus</i> / <i>H. vittatus</i>	0	0 < Cλ < 0.6	No
Kadei	<i>A. macrophthalmus</i> / <i>B. imberi</i>	0.818	Cλ > 0.6	Yes
	<i>A. macrophthalmus</i> / <i>B. macrolepidotus</i>	0.002	0 < Cλ < 0.6	No
	<i>A. macrophthalmus</i> / <i>H. vittatus</i>	0	0 < Cλ < 0.6	No
	<i>B. imberi</i> / <i>H. vittatus</i>	0.041	0 < Cλ < 0.6	No
	<i>B. imberi</i> / <i>B. macrolepidotus</i>	0.037	0 < Cλ < 0.6	No
	<i>B. macrolepidotus</i> / <i>H. vittatus</i>	0	0 < Cλ < 0.6	No

CONCLUSION

The study of the diet of Alestidae in Boumba and Kadei reveals that depending on their mode of feeding, Alestidae fishes can be carnivorous or omnivorous. However, an overlap in diet has been observed in omnivorous species.

REFERENCES

Eschmeyer, W.N. 2010. The catalog of Fishes, on-line version. California Academy of Sciences. Looking at 10 november 2020

FAO, 2000. Projected population and fish demand and supply in Nigeria. <http://www:FAO./filfcp/NGA/bodyhtm>. March 2000