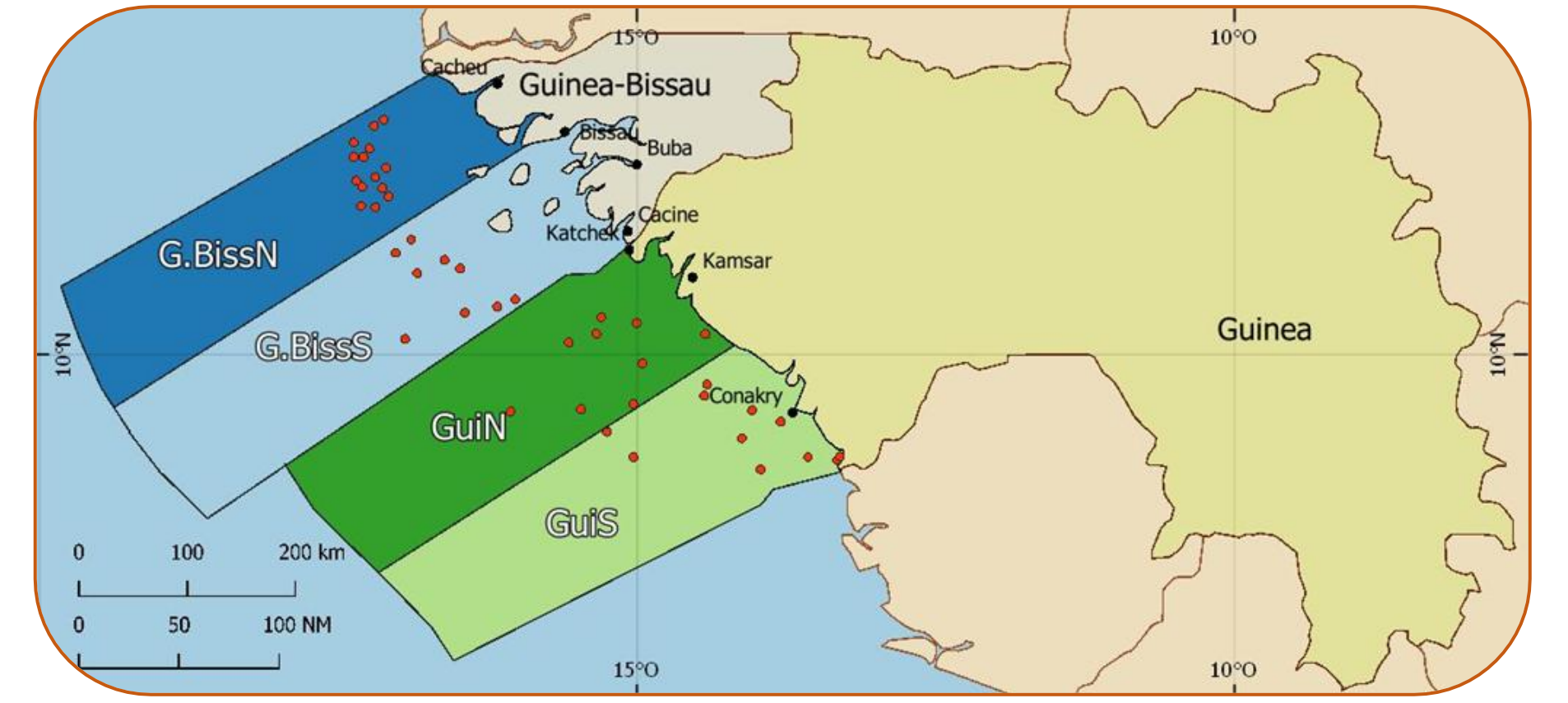


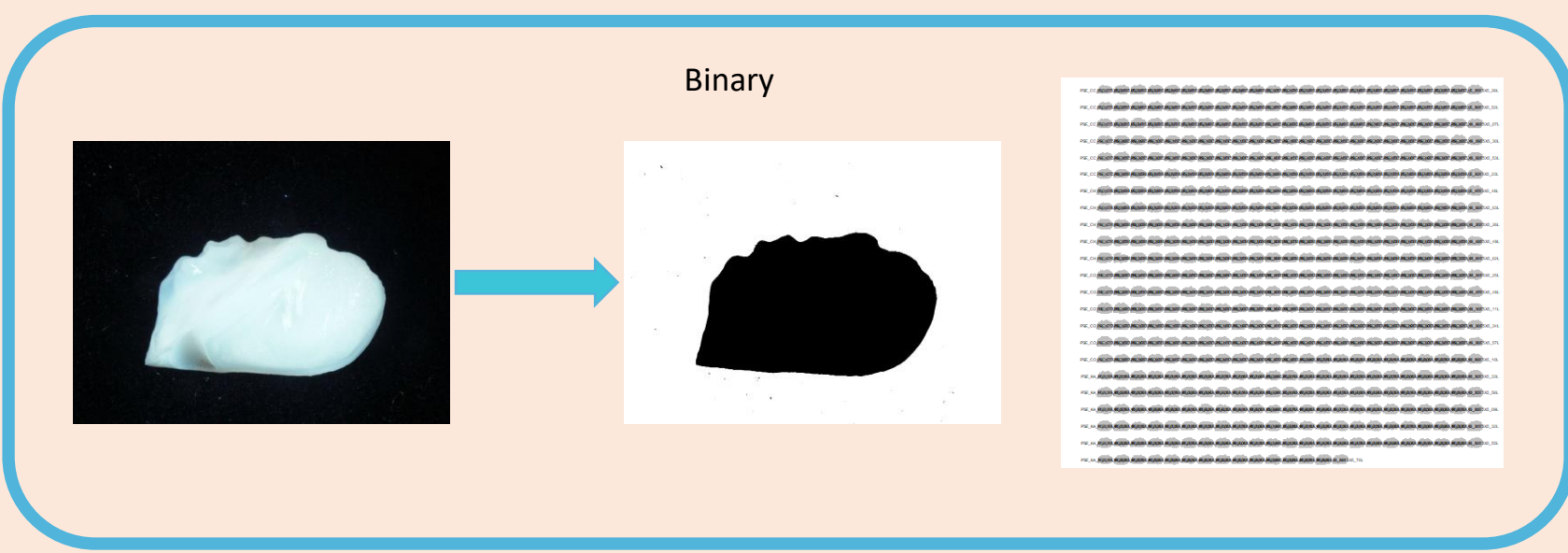
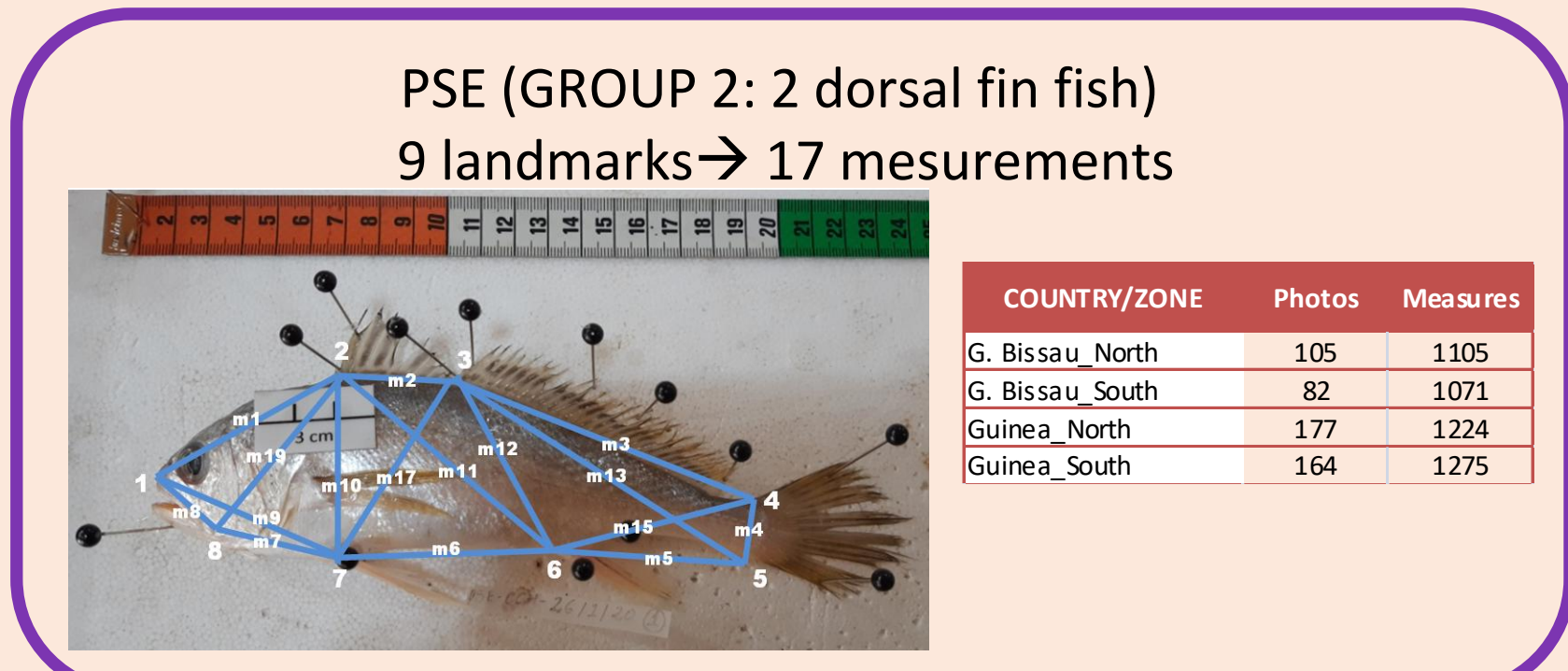
### 1 Introduction

The bobo croaker *P. elongatus* is assumed by CECAF as one single stock for Guinea-Bissau, Guinea, Sierra Leone and Liberia for assessment purposes. The consideration of one single stock for these 4 countries follows practical reasons and has no any biological basis.



### 2 Methods

Specimens pictures & otoliths (bi-annual)



Classification and multivariate analysis:

- Principal Component Analysis (PCA)
- Linear Discriminant Analysis (LDA)

#### Morphometry

Analysis based on morphometric measurements of the species (pictures) → TRUSS NETWORK

Analysis based on the otolith shape → FOURIER

#### Statistical analysis by country-zone

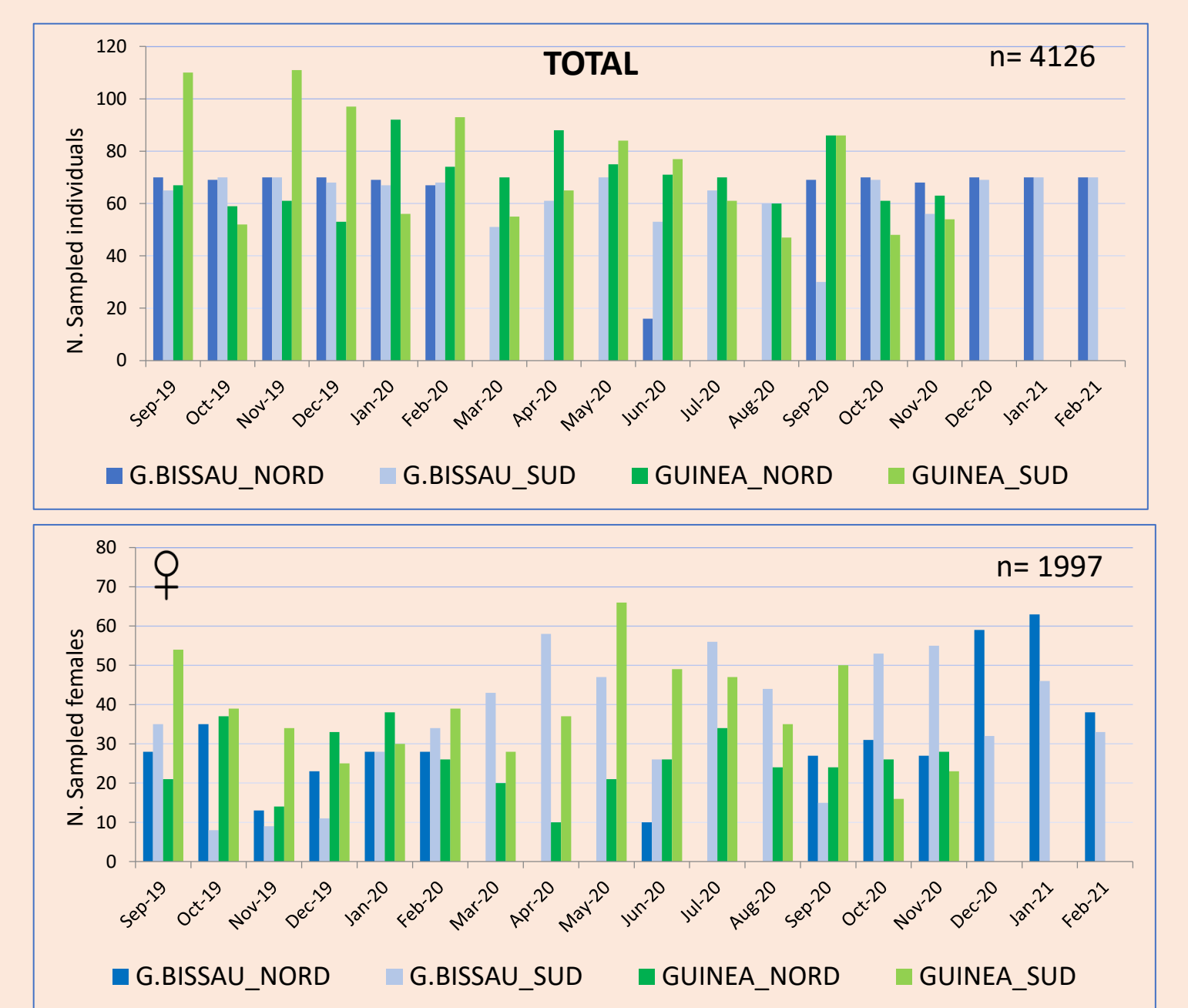
#### Life History Traits

Weight parameters

Reproduction parameters and features

Biological samplings (monthly)

- Length
- Sex
- Weight
- Gutted weight
- Gonad weight
- Maturity stage (1-5)
- Otoliths



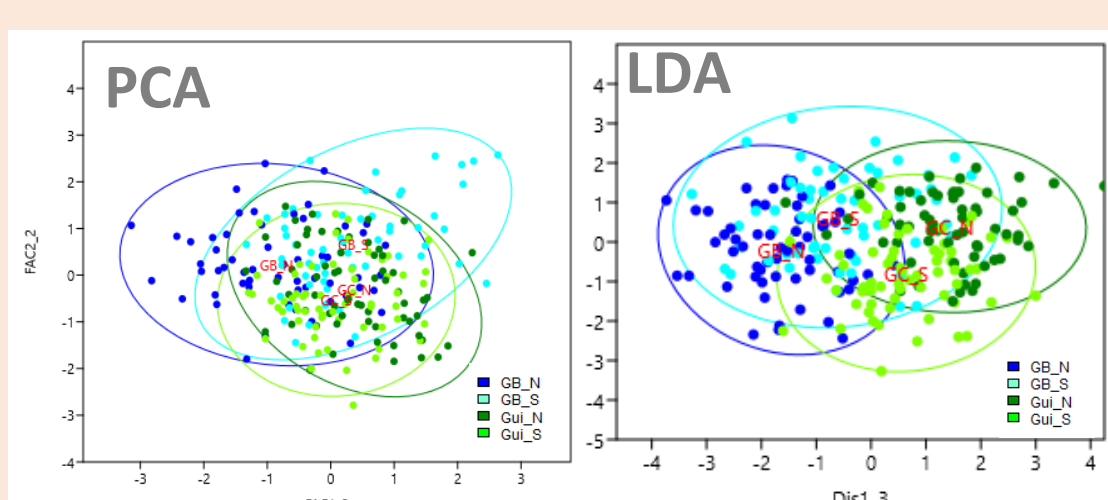
Parameters comparison by:

- ANCOVA (Kruskall- Wallys)
- ANOVA (Mahn-Whitney)/ (Kruskall- Wallys)

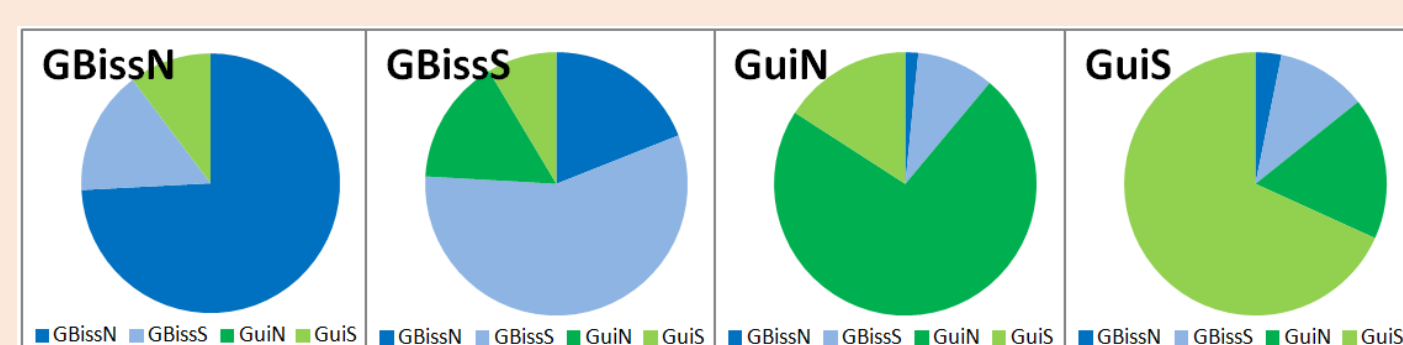
### 3 Results

#### Morphometry

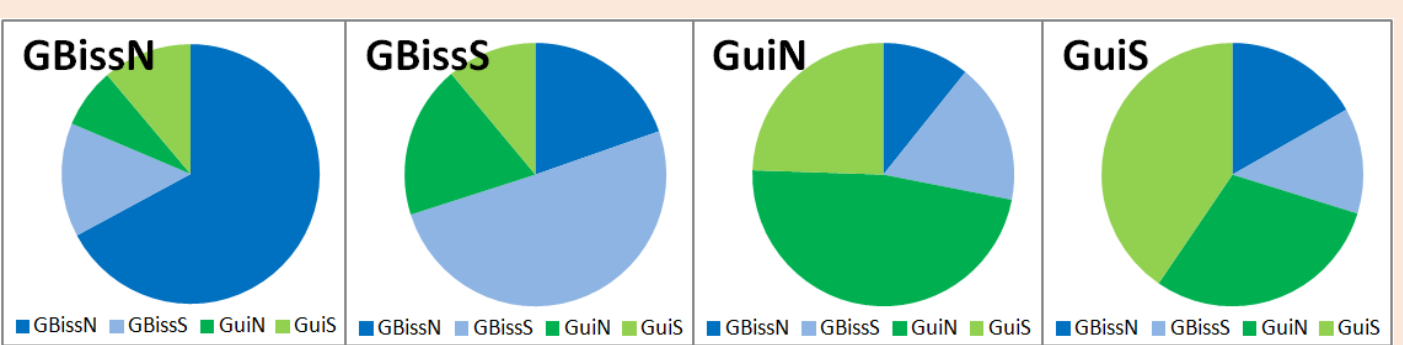
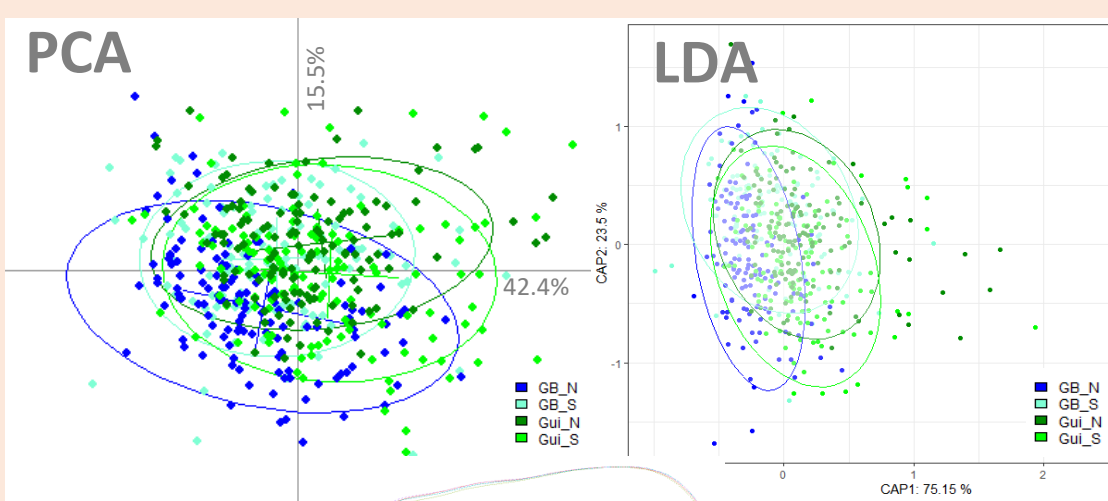
##### SPECIMEN SHAPE (TRUSS NETWORK)



Correct classification from LDA



##### OTOLITH SHAPE (FOURIER ANALYSIS)

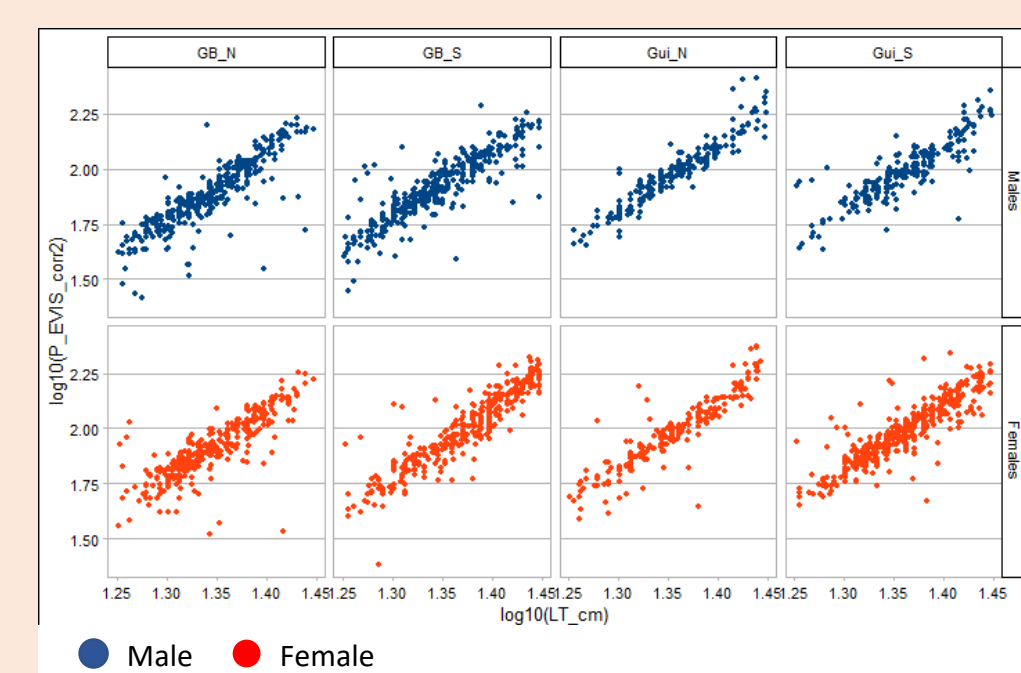


Similarity of the results of both morphometry methods. Based on the correct classification, comparison test, and PCA results: individuals from Guinea- Bissau could be distinguished from individuals from Guinea.

#### Life History Traits

##### WEIGHT PARAMETERS

Length- Gutted weight relationship



Contry-Zone	Length- Gutted weight relationship		Le Cren's condition factor (k)		
	Slope (b)	SE	median	mean	sd
G. BISSAU_N	2.80	0.06	0.97	0.96	0.17
G. BISSAU_S	2.93	0.05	1.02	1.01	0.13
GUINEA-N	3.05	0.06	1.06	1.08	0.15
GUINEA_S	2.85	0.06	1.05	1.07	0.16

No significant differences are observed in weight parameters among the four zones.

##### REPRODUCTION

	FEMALES	G. BISSAU_N	G. BISSAU_S	GUINEA_N	GUINEA_S
Spawning period		6 of 7 months sampled	All year	All year	All year
Spawning peaks		..Jan-Feb.. (uncompleted)	March-April/ Jun-Jul	March-May/ Jul-Ago	March-April/ Jun-Ago
L50		19.0	24.9	16.8	-
cv		0.59	0.04	0.85	-
N		94	183	109	-

The species spawns throughout the year, with two main spawning peaks. Length at first maturity (L50) of females are not consistent between different countries-zones.

### 4 Conclusions (preliminary)

While data from life history traits do not show conclusive results, the two morphometric techniques (body shape-truss network and otolith shape) show more reliable information for stock identification. Following these techniques, two independent stocks of *Pseudotolithus elongatus* can be distinguished for Guinea-Bissau and Guinea. A more in-depth analysis of this information is being carried out and the results may be useful for fisheries assessment and management of this species.

The extension of this study to longer periods and to the southern areas considered as the same stock that Guinea Bissau-Guinea by CECAF (Sierra Leona and Liberia) is highly recommended.

