DEMERSTEM : WP4
Biodiversity and ecosystem assessment of the Guinean marine shelf using indicators

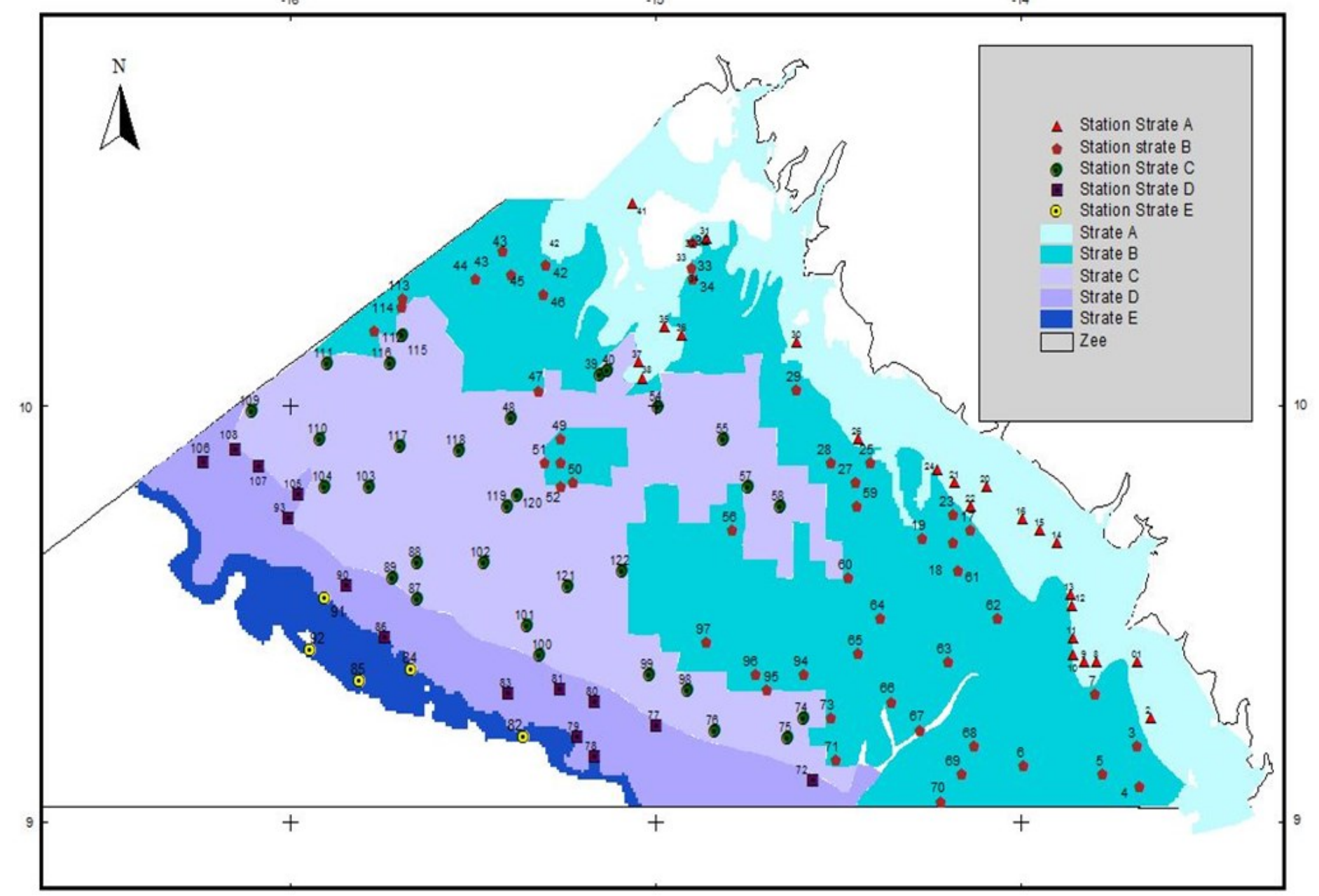Ibrahima DIALLO[1], Modou THIAW[2], Mamour NDIAYE[2], Brahim TFEIL[3] et Didier JOUFFRE[4,1]

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1 Introduction

Under the context of an ecosystem approach to fisheries (EAF), there is keen interest in providing insights into the evolution of exploited ecosystems in West-Africa using ecosystem indicators. In this context, an Indicator approach was developed in DEMERSTEM (WP4) to address the practical concerns linked to this objective of monitoring EAF indicators, computed in a standardized way, using data from different sources available in West Africa. The present study is an application of this approach to the Guinean marine ecosystem assessment.

Topography of the Guinean sheff and location of the sampling stations of the 2017 Scientific demersal trawling survey

2 Data and indicators

Research surveys data

In Guinea, there are long-term scientific research surveys and statistic data.

Guinean EEZ - Data Sources Landings and surveyed catches : CNSHB database

❖ Two National Research Vessel + two external

  ▪ A. NIZERY (1985-1995) , ANTEA (1997-1998)

  ▪ Al Awam (2002) and GLC (since 2004)

The current CNSHB Research Vessel: General Lansana CONTE (GLC)

### Commercial fishing data

Small-scale fisheries

Industrial fishery

Fisheries monitoring data (artisanal and industrial) are available at the CNSHB over the period 1995 – 2016.

Biodiversity and ecological indicators

About 10 ecological indicators – derived from indiseas (http://www.indiseas.org/) and additional ones - are estimated from cruise data and fishing statistics and their trends are analyzed along four decades.
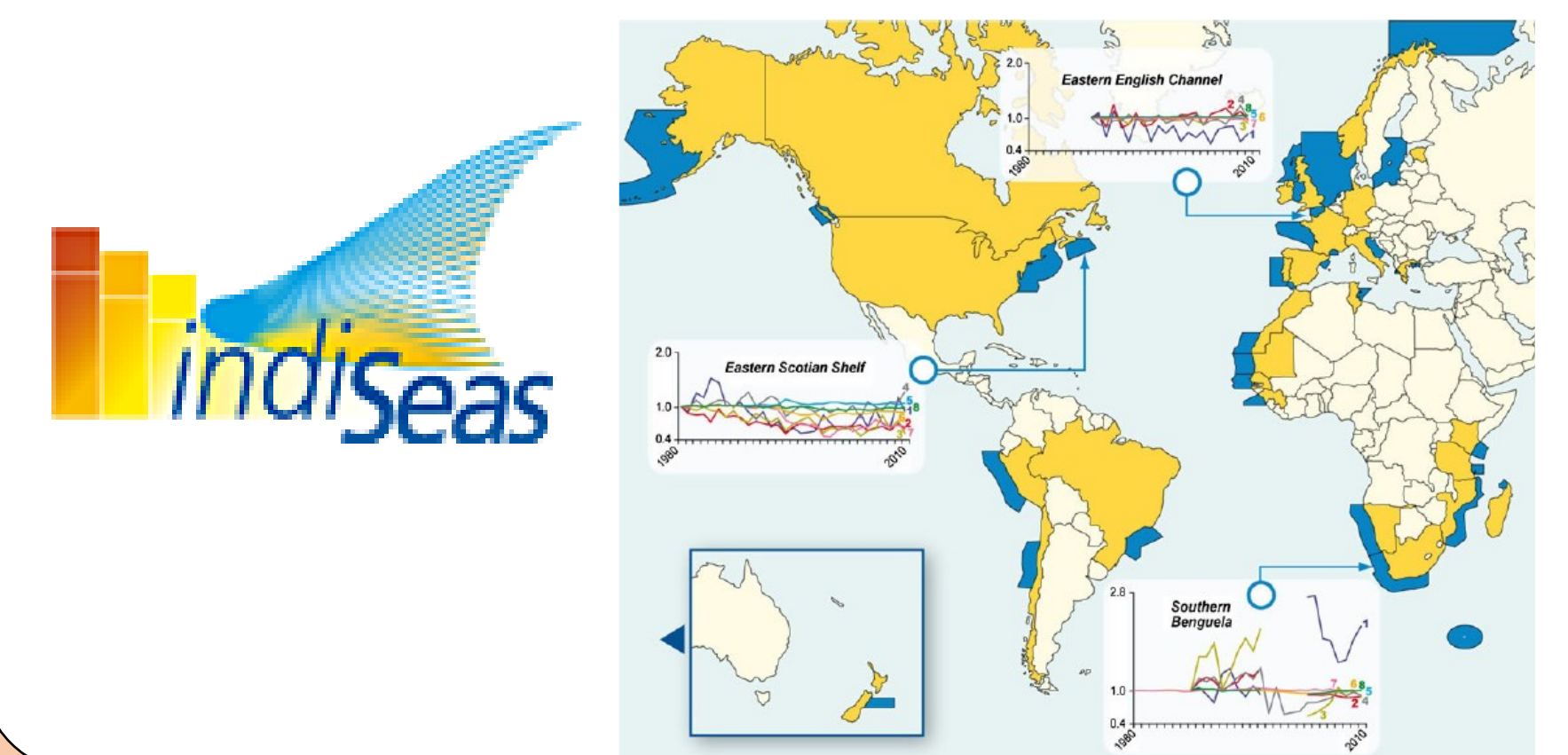

3 Results

Biomass varied from year to year with an increase since 2008. Trophic level and life span of the communities are slightly decreasing with high interannual variability.

Diversity indices are highly variable from year to year with slight trends over the period. Dominance curves showed stressed communities.

The landings and Marine Trophic Index are increasing over the 1995-2016 period. In contrast the Trophic Level are decreasing.
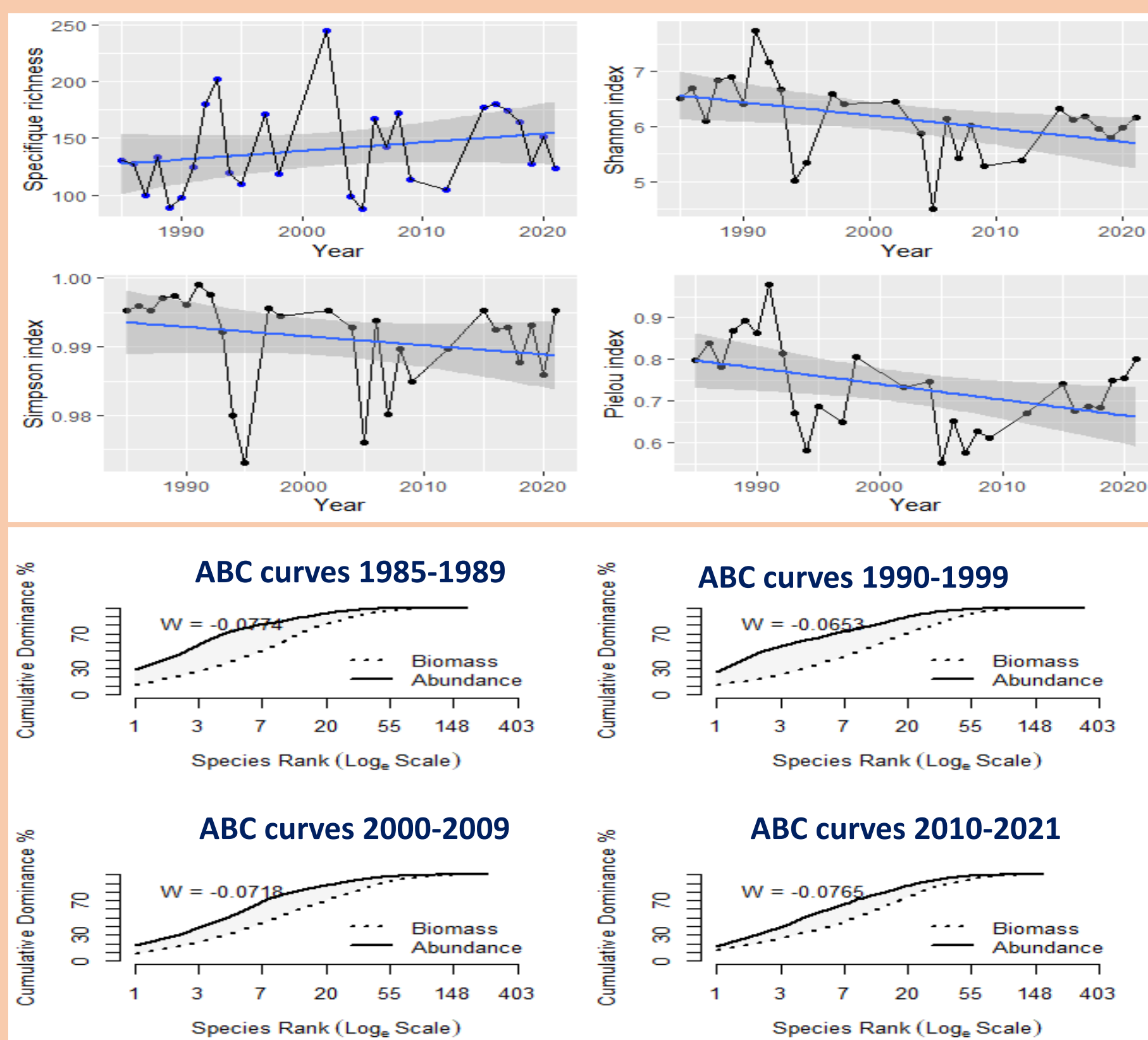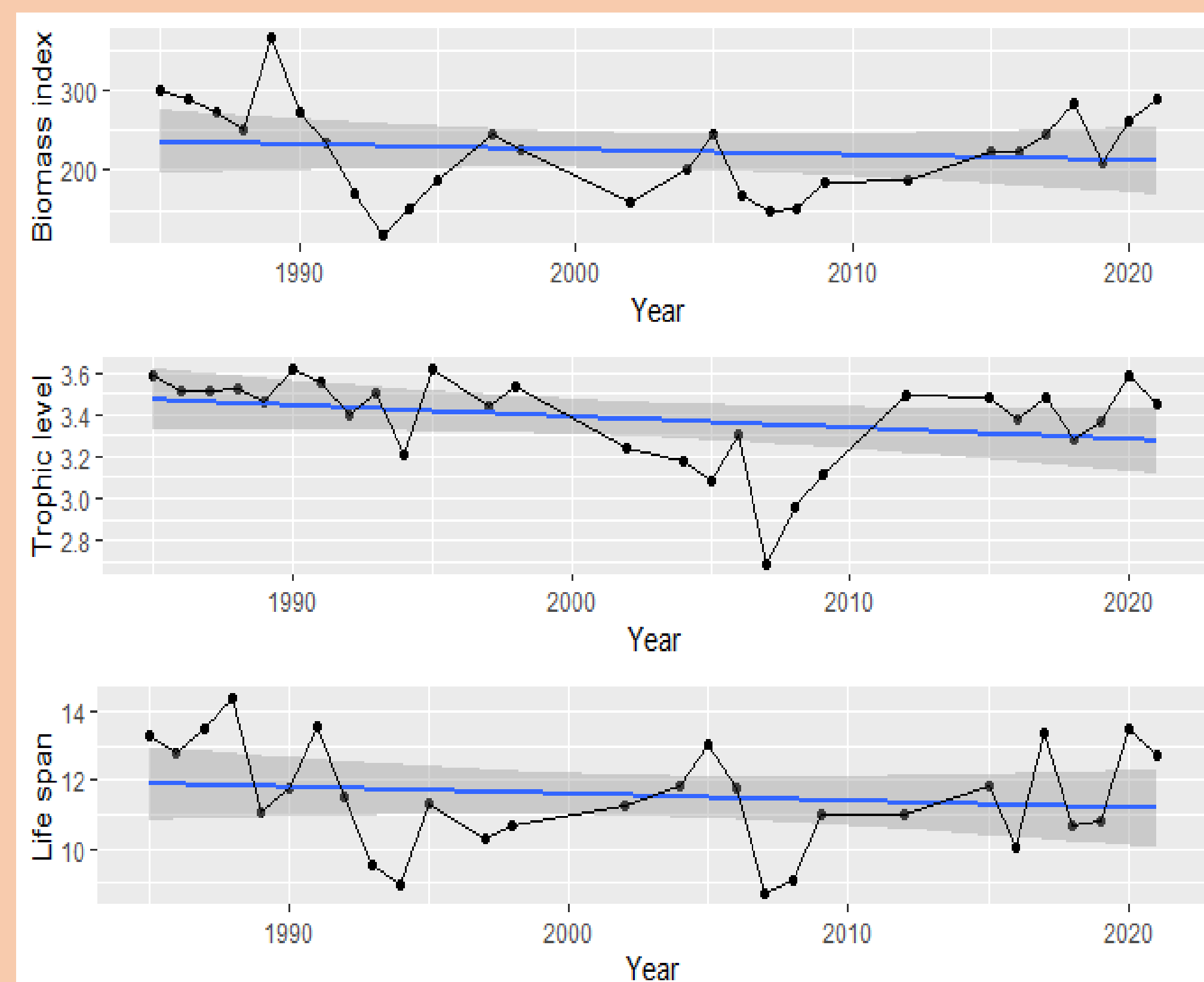
4 Conclusion

▪ There has been an increase in the biomass of demersal resources since 2008; after a decade of biomass decrease of some demersal resources, particularly the coastal ones.

▪ The coastal marine ecosystem appears to be still stressed (dominance curves) probably due to the fishing pressure (TL_landings).

▪ The analysis of the results recommends the implementation of ecosystem-based fisheries management that respects the sustainability of resources and the state of health of the Guinean ecosystem.

References :

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Jouffre, D., and Inejih, C. A. 2005. Assessing the impact of fisheries on demersal fish assemblages of the Mauritanian continental shelf, 1987–1999, using dominance curves. – ICES Journal of Marine Science, 62: 380-383.

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