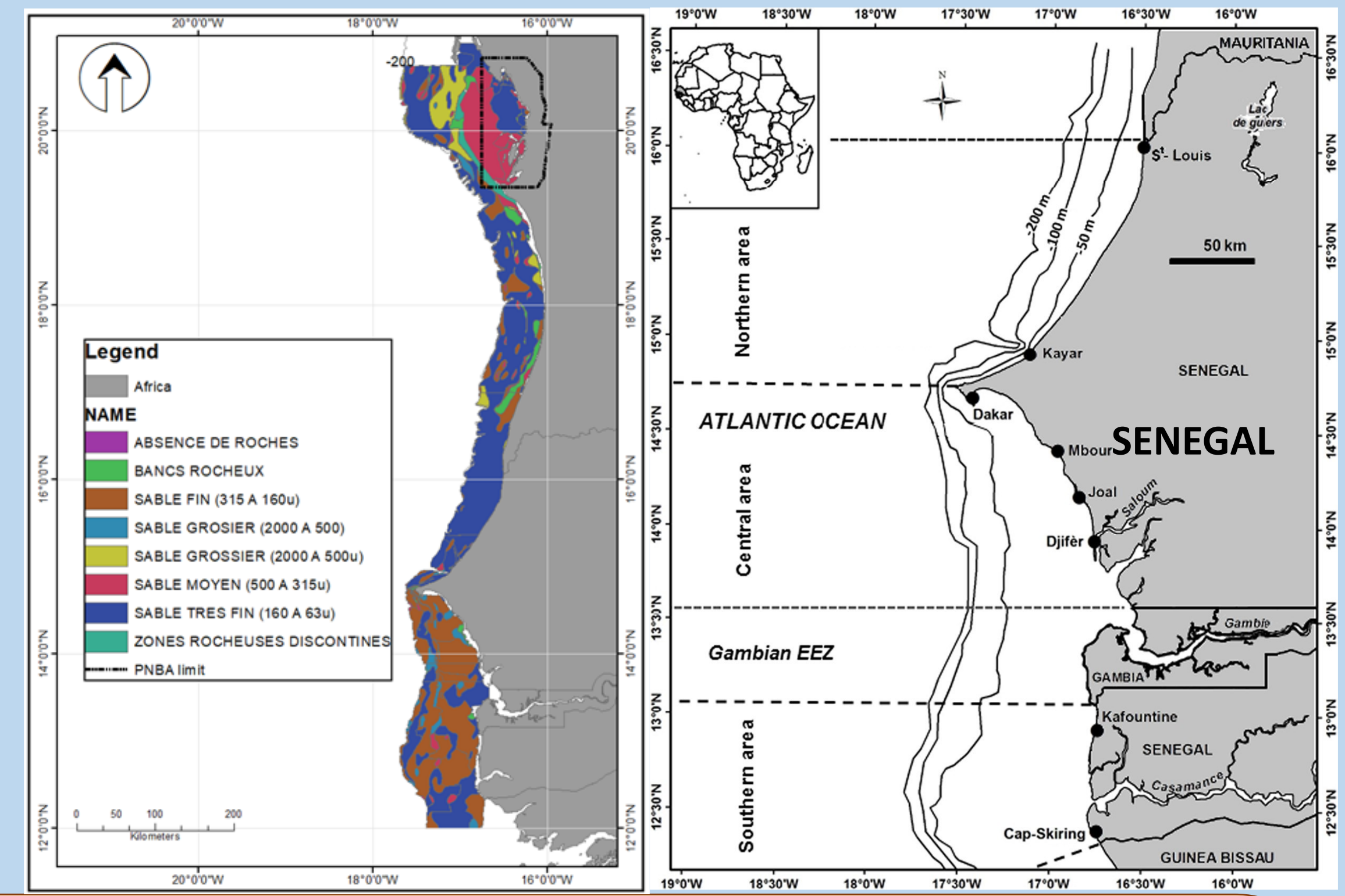




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### Topography of the Senegalese shelf



## 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 Senegalese marine ecosystem assessment.

## 2 Data and indicators

### Research surveys data

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

Senegalese EEZ - Data Sources Landings and surveyed catches : CRODT database

- ✓ Surveys data of period 1981 -1995 : by RV Louis Sauger
- ✓ Surveys data of period : by RV Itaf Deme



### Commercial fishing data

#### Small-scale fisheries

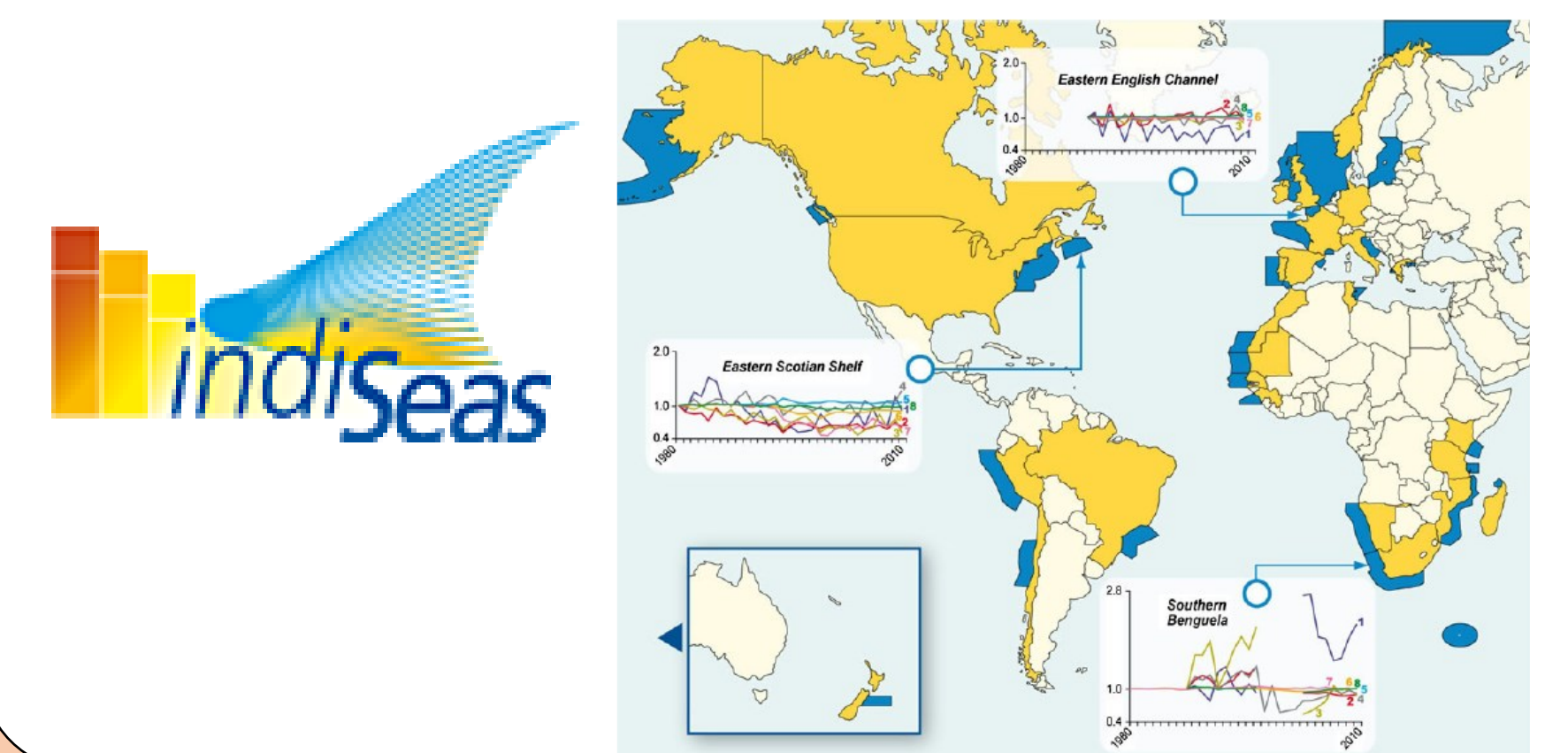


#### Industrial fishery

Fishing statistics data used are the total annual catches by species of small-scale fisheries and industrial fishery provided by the CRODT and the DPM over the period 1980-2020.

### Ecological and biodiversity indicators

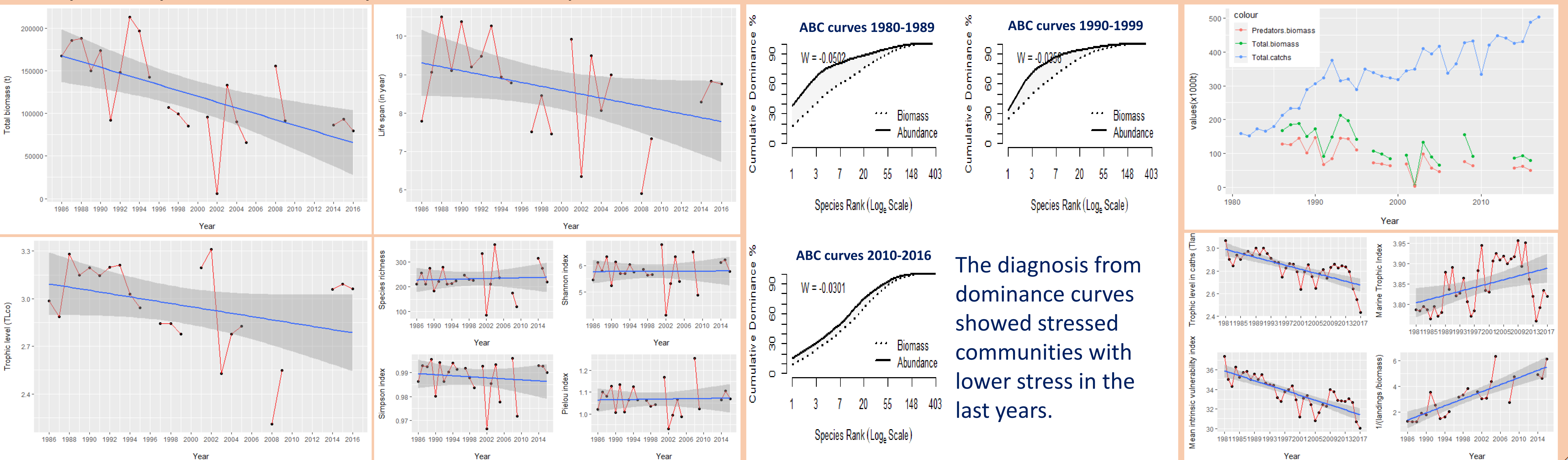
About 15 ecological indicators – derived from indiseas (<http://www.indiseas.org/>) and additional ones - are estimated from cruise data and fishing statistics and their trends are analyzed along four decades.



## 3 Results

Biomass varies from year to year with an decreasing trend over the 1986-2016. Mean life span and trophic level of the community showed decreasing trends over the period. Diversity indices are highly variable from year to year and relatively stable over the period 1980-2018.

The increase in fishing pressure and catches results in different trends of the indicators based on fishing data: increasing of Marine Trophic Index and decreasing of Trophic Level and intrinsic vulnerability.



The diagnosis from dominance curves showed stressed communities with lower stress in the last years.

## 4 Conclusion

- Most of biodiversity and conservation-based indicators are decreasing along time.
- The Senegalese marine ecosystem is globally overexploited. We also need to keep on mind that there are lack of information on other impacts caused by pollution and climate change.
- The study on Senegalese ecosystem illustrates that indicators analysis provides potential pathways that could be useful for the implementation of an Ecosystem Approach to Fisheries EAF in West Africa.

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