

Use of ecosystem indicators to assess changes in fisheries

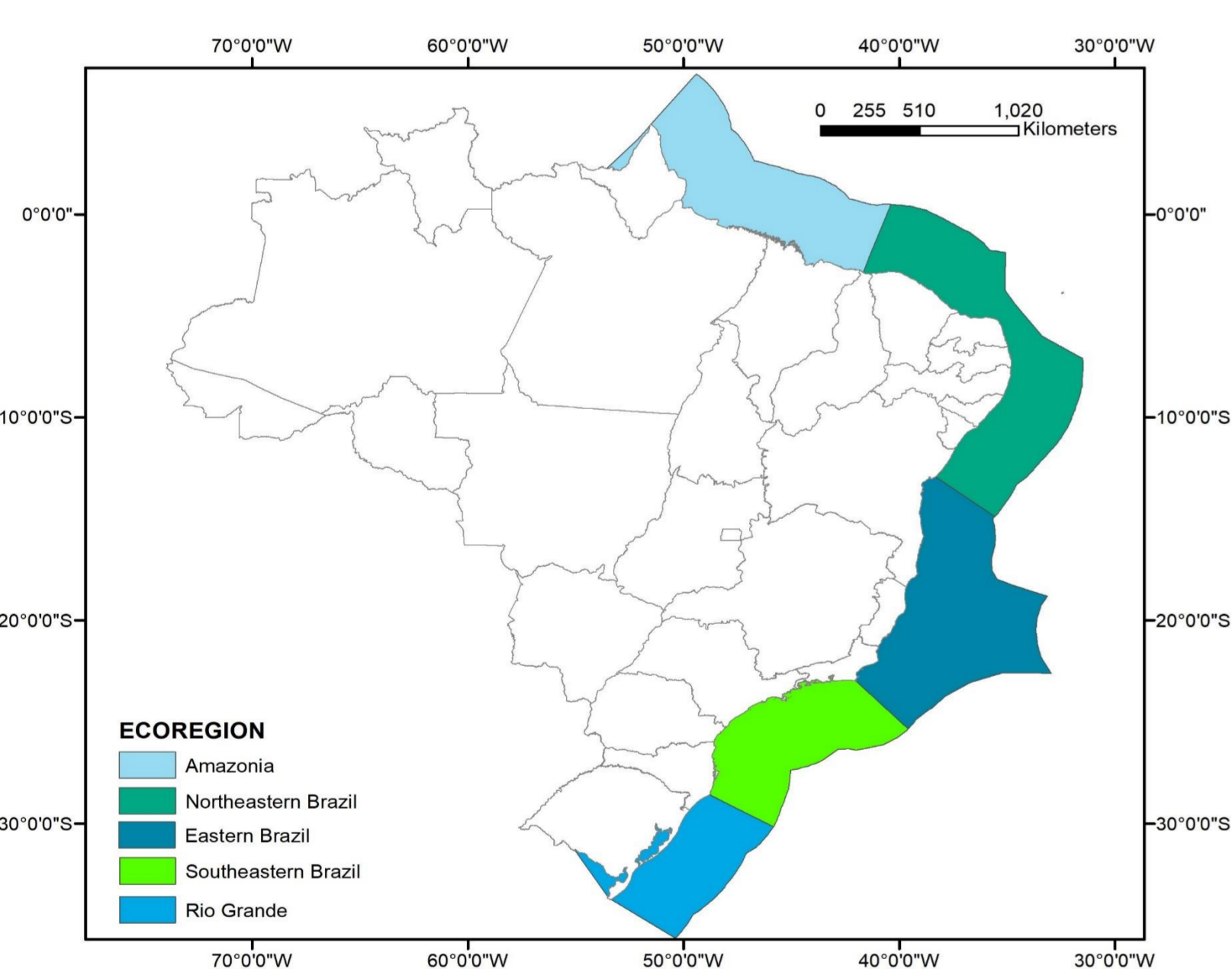
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Introduction

Given the importance of fisheries and the potential negative effects they may cause, the sustainability of the world fisheries is becoming a major concern. However, conventional approaches to fisheries management have not been effective since they only consider the impact of fishing on target species, neglecting the impacts on non-target species, marine habitats and human impacts. Such neglect has fueled the claims for the Ecosystem Approach to Fisheries (EAF). One of the approaches suggested to apply a EAF is the use of ecosystem indicators that describe and simplify the interactions between fisheries and marine ecosystems.

This study describes and analyzes the general pattern of fisheries resource use in Brazil, from an ecosystem perspective.

Material and methods



Brazilian reconstruction of catch statistics 1950 - 2010

Ecosystem indicators

Pelagic/Demersal Ratio

Marine Trophic Index

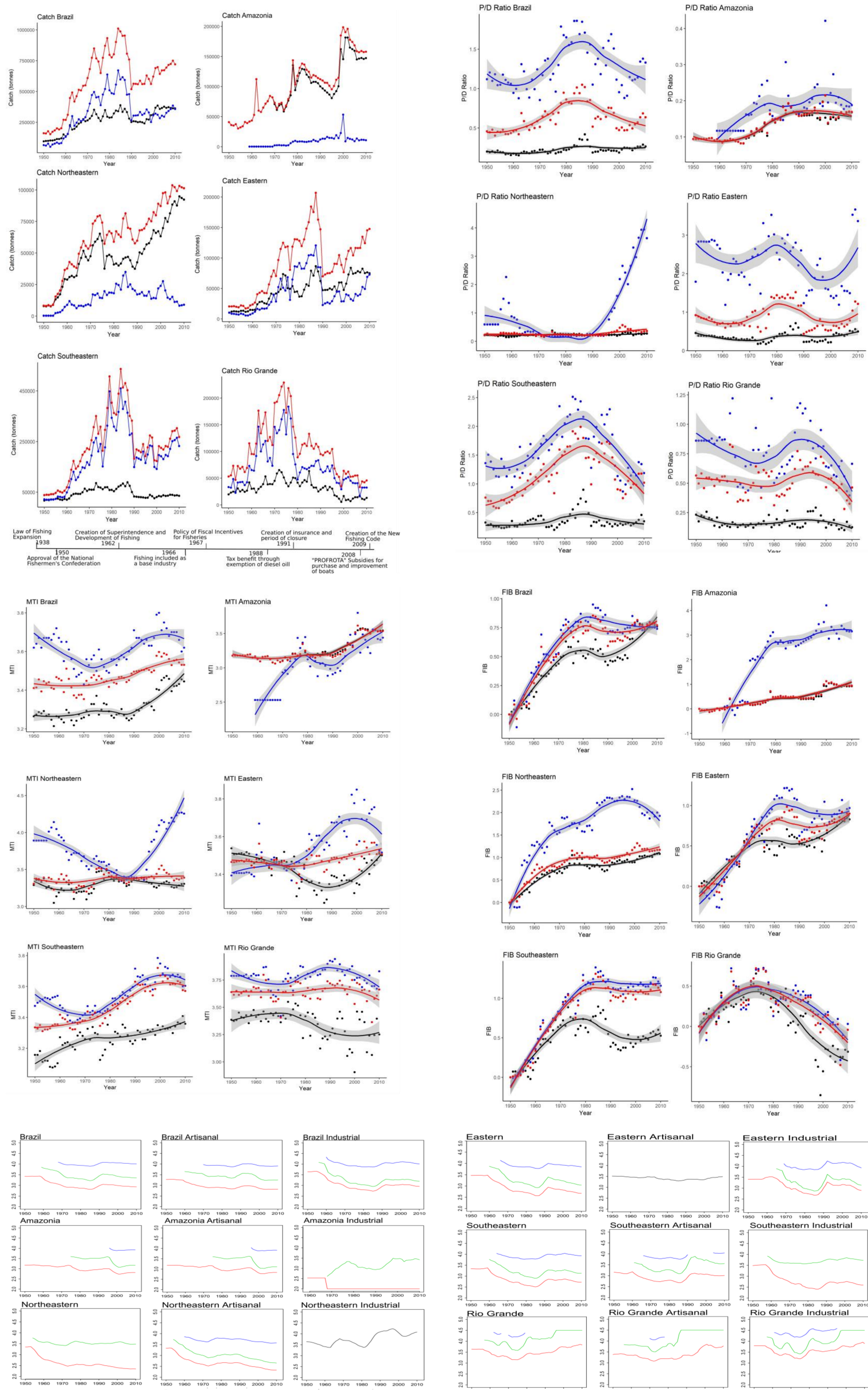
Fishing in Balance

Regional Marine Trophic Index

Discussion

The decrease in MTI, which indicates a decrease in the average TL of landings, suggest that the fishery is gradually capturing more species of lower trophic levels, probably because fish from upper TLs have been overexploited. The fishery expansion observed, indicated by FiB above 0 and RMTI results, could probably consequence of direct government support to the fishing sector.

Results



Ecosystem indicators embody various definitions of ecology such as trophodynamic interactions. They can be used to monitor trends over time, provide an early warning signal of changes in the environment and support management. The use of indicators, especially of those that do not require plenty of data, could contribute to a better understanding of the impacts on the ecosystem caused by fishing.