

# Changes in the Coastal Ecosystem of the Cape Verde Archipelago over the Period 1981 to 2000: a simulation model using Ecosim.

K.A. Stobberup<sup>1</sup>, V. M. Ramos<sup>2</sup>, and M.L. Coelho<sup>1</sup>

1. IPIMAR - Instituto de Investigação das Pescas e do Mar; Av. Brasília, 1449-006 Lisboa, Portugal; [karaujo@ipimar.pt](mailto:karaujo@ipimar.pt)
2. INDP - Instituto Nacional de Desenvolvimento das Pescas, C.P. 132, Mindelo, Cape Verde; [vitomelo10@yahoo.com](mailto:vitomelo10@yahoo.com)

## Abstract

Two mass-balance trophic models were constructed to describe the coastal ecosystem of the Cape Verde Archipelago for two time periods, 1981 to 1985 and 1994 to 1997. The first model for the period from 1981 to 1985, characterised by a predominantly artisanal fisheries and low level of motorisation, corresponds to the initial phase of a more intensive fishery development. It was during this initial phase that the first systematic surveys were undertaken, providing estimates of biomass for different fish stocks. The second model is based on the most recent information available, which includes biomass estimates.

A dynamic simulation model, using Ecosim, was then used to simulate from one time period to the other, based on the observed biomass estimates and fishery catches. Using this approach, it was possible to study whether the model could capture the observed changes during the study period and the possible reasons for this. In spite of this relatively short period, a general decreasing trend is observed in terms of absolute or relative biomass estimates. This appears to be related to lower productivity as fishing pressure can not account for the observed decrease in biomass estimates for demersal fish and small pelagic stocks, in particular.