Predict harvesting of *Trichiurus lepturus* (Largehead Hairtail) stocks in Perian Gulf and Sea of Oman (Iran)

Hashemi S.A.[1*]; Taghavimotlagh S.A.[2]; Doustdar M.[2]

1- Offshore Fisheries Research Center, Iranian Fisheries Science Research Institute, Agricultural Research, Education and Extension Organization, Chabahar, Iran.
2-Iranian Fisheries Science Research Institute, Agricultural Research, Education and Extension Organization, Tehran, Iran.
*Corresponding author's Email: Seyedahmad91@gmail.com

Abstract:
The purpose of this study is to develop a framework that uses of different forecasting methods and selects the best one with the least possible forecasting errors to predict harvesting of *Trichiurus lepturus* (Largehead Hairtail) stocks in Perian Gulf and Sea of Oman. In this study, the eleven different forecasting techniques including decomposition method (Multiplicative and Additive), moving average, exponential smoothing (Single, Double), trend an analysis (Linear, Exponential, Quadratic, S-Curve), Winters method (Multiplicative and Additive) were performed by statistical technique to predict harvesting of *T. lepturus* (Largehead Hairtail) stocks in Persian Gulf and Sea of Oman. Then, it was observed the results of model Trend Analysis of Quadratic (MAPE=2.77, MAD=0.10, MSD=0.01) are better than other models according to these tests and coefficients and finally, a prediction was accomplished for a period of five years by using the same model. Various models use to identifies orders of autoregressive integrated moving average, ARIMA, (p, d, q) based on the AIC and BIC, and then ARIMA (0, 1, 1) with drift was suitable for modeling annual *T. lepturus* landings based on the selection criteria (AIC=1.75, BIC=3.79).

Keywords: forecasting techniques, trend analysis, autoregressive, ARIMA, Largehead Hairtail