

# **Growth, Mortality and Exploitation Rates Of Nile Tilapia *Oreochromis niloticus* L. in Lake Langano (Ethiopian Rift Valley)**

- Poster -

Mulugeta Jovani Cavallo

Ethiopian Agricultural Research Organization, National Fisheries and Other Living  
Aquatic Resources Research Center, P.O.Box 64, Sebeta, Ethiopia, mulujovc@yahoo.com

The growth and mortality rates of *Oreochromis niloticus* (Linnaeus) for Lake Langano were estimated from two years (1995 and 1996), while length frequency data was obtained from commercial beach seine landings. The estimates of the parameters  $L_{\infty}$  and K were obtained using the ELEFAN and LFDA software packages. M was estimated using Pauly's empirical formula. The results for the individual parameters showed the following values:  $L_{\infty} = 38.4$  cm,  $K = 0.375 \text{ year}^{-1}$  and  $M = 0.932 \text{ year}^{-1}$ . Total catch and length frequency of the landings were used to estimate total numbers caught by length group. The Jone's length based cohort analysis was used to calculate the fishing mortality. The Thompson and Bell length based predictive model and the Beverton and Holt yield per recruit model were used to estimate Maximum Sustainable Yield (MSY) and corresponding levels of fishing effort. The results show a MSY of 185 tons of tilapia per year and the reduction of the existing effort level (36 beach seines) by up to 50%. These results are compared with previous MSY estimates and discussed. Further changes to the total effort should be made while considering the results of stock assessment studies and in consultation with fishermen operating on the lake. Additional measures that could be taken include the termination of fishing activities in the Northern part of Lake Langano where they are currently concentrated, and shifting operations to the Southern and Eastern parts of the lake where fishing activity is limited to a relatively small area.