

Title: **Measuring capacity and capacity utilization of the Eastern Mediterranean purse seine fleet**

Author(s): Premachandra Wattage, Efthymia Tsitsika, Christos Maravelloas

Abstract: The existence of excessive fishing capacity is globally recognized by resource managers as a major problem for fisheries, which is responsible for the degradation of fishery resources and for significant economic waste. Lately, the measurement of fishing capacity and capacity utilization has become more important due to the various national and international agreements and policies to reduce capacity in fisheries throughout the world. In this study, estimates of the fishing capacity and capacity utilization of the Eastern Mediterranean purse seiners were made using Data Envelopment Analysis (DEA). Estimates were made for individual vessels based on the level of inputs used and outputs produced, relative to the other vessels operating under similar conditions. Analyses were made for the two fleet segments operating in Greece, 12-24 m and 24-40 m. From the DEA results of our study it was evidenced that both fleets were operating below their unbiased capacity output level. This suggested the existence of excess capacity especially in the fleet segment 12-24 m. Moreover, from our results it was evidenced that the 24-40 m fleet segment was found to be more efficient than the 12-24 m fleet segment. The variable input utilization rate (\gg) derived by the DEA models showed that most of fishing vessels could have increased their landings by fishing for more days. Only 24% and 27% of the 12-24 m and 24-40 m fleet categories respectively were operating at their optimal number of days. This result will be compared with the results of a tobit analysis and the distance function analysis used in the project to find out capacity measurements. Understanding the definitions and measurement of fishing capacity and efficiency can be helpful tools in designing an effective capacity management plan. Improved management and monitoring of fishing capacity will contribute to sustainable, conservation-based fisheries.